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HOOKER'S

ICONES PLANTARUM;

OR,

FIGURES, WITH DESCRIPTIVE CHARACTERS AND REMARKS,

OF NEW AND RARE PLANTS,

SELECTED FROM THE

KEW HERBARIUM.

THIRD SERIES.

EDITED BY

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ICONES PLANTARUM.

Plate 1001.

HERMAS VILLOSA, *Thunb.*

Umbelliferæ.

H. villosa, *Thunb.; DC. Prodr.* iv. 242; *Harv. et Sond. Fl. Cap.* ii. 566.

Hab. Mountains near Cape Town, S. Africa.

Herba dura, 2–3-pedalis, caule basi perenni crasso sublignoso, foliorum vetustorum vaginibus obtecto tomentoso-lanato, superne glabrato. *Folia* prope basin caulis conferta, ex ovato oblonga, 2–4-pollicaria, sinuato-dentata, basi supra petiolum brevem rotundata v. cordata, rarius sessilia, crassiuscula, supra demum glabra nitidaque, subtus tomentosa et reticulato-venosa. *Umbellæ* confertæ, multiradiatæ, ad apicem caulis paucæ longe pedunculatæ. *Involucri* bracteæ lanceolatæ, acuminatæ, basi subconnatæ, radiis dimidio breviores; involucellorum bracteæ solitariæ v. paucæ, angustæ, pedicellos æquantes. *Flores* in umbellula centrales 1–3 perfecti, cæteri masculi. *Calycis segmenta* ovata, petaloidea, semilinea paullo longiora. *Petala* lineari-subulata, apice inflexa, calycis segmentis longiora. *Fructus* 2 lin. longus.

Thunberg's original error in describing the calycine segments of the flowers of *Hermas* as petals has been followed by most subsequent writers, by De Candolle, by Endlicher (Gen. Pl. 790), by Sonder and others, whilst the same organs have been made to do duty again as petals, the true subulate petals having been overlooked, or mistaken for filaments. Fenzl's amended character in the fourth Supplement to Endlicher's 'Genera,' part iii. p. 2, is the only one I have met with where the parts of the flower are correctly described, and the real affinities of the genus with the *Mulineæ* ascertained. It is in order to call attention to this peculiar structure that we have here introduced an otherwise well-known plant, long since fairly figured as to external habit by Burmann (Pl. Afr. t. 71. f. 2).—G. Bentham.

Fig. 1. Umbellule. 2. Hermaphrodite flower. 3. The same, more open. 4. Petal. 5. Two stamens. 6. Ovary crowned by the calycine segments, petals, and styles after the stamens have fallen off. 7. Fruit. 8. Transverse section of the same.

Plate 1002.

TRAVERSIA BACCHAROIDES, *Hook. f.*

Compositæ, § Senecionideæ.

T. baccharoides, *Hook. f. Handb. N. Zeal. Fl.* 164.

Hab. New Zealand, mountains of the Middle Island, Upper Awatere and Wairau valley, alt. 5000 ft., *Sinclair*. Hurumui Mountains, Discovery Peaks, alt. 5500 ft., *Travers*. Gorge of the Poulter, alt. 2200 ft., *Haast*.

Frutex parvus, glaberrimus, parce ramosus, subglutinosus, ramulis teretibus sulcatis flexuosis, inferne angulatis. *Folia* sparsa, sessilia, decurrentia, $1\frac{1}{2}$–$2\frac{1}{2}$ poll. longa, obovato-spathulata, subacuta, obtuse serrata, basin versus integerrima, coriacea, nervis tenuibus subflabellatis. *Capitula* homogama, in corymbos laxos terminales disposita, gracile pedunculata, pedunculis 2-chotomis, bracteis paucis sparsis linearibus auctis, ad $\frac{1}{3}$ poll. diametro, erecta, flava. *Receptaculum* planiusculum, alveolatum, marginibus alveolorum fimbrilliferis. *Involucrum* subhemisphæricum, basi sæpe glutinosum, bracteis 1-seriatis lineari-oblongis obtusis ciliolatis rigidis puberulis, siccatione sulcatis, basi subincrassatis, additis paucis exterioribus linearibus. *Flores* 12 ad 15, tubulosi, flavi, 5-lobi, lobis linearibus revolutis. *Stamina* exserta; antheræ lineares, ecaudatæ. *Styli* rami lineares, truncati, apice papillosi. *Achenium* breve, cylindricum, sulcatum v. costatum. *Pappus* 1-serialis, rigidus, scaber, albus.

A remarkable plant, of obscure affinity, differing from *Senecio* in the very rigid scabrid pappus, and resembling in certain points the curious Juan Fernandez genera *Balbisia* and *Robinsonia*. The achenium is immature, and I cannot hence determine whether the cotyledons are involute, as in those genera. I find a minute cordiform embryo in the cavity of the half-mature seed.—J. D. Hooker.

Fig. 1. Floret. 2. Hair of pappus. 3. Single stamen. 4. Style-branches.

Plate 1003.

HAASTIA PULVINARIS, *Hook. f.*

Compositæ, § Senecionideæ.

H. pulvinaris, *Hook. f. Handb. N. Zeal. Fl.* 156.

Hab. New Zealand, mountains of the Middle Island, Kaikora range, and Mowatt's Mountains, alt. 5000 ft., *Sinclair*. Discovery Peaks, alt. 5800 ft., *Travers*.

Planta densissime cæspitosa, pulvinos depressos fulvos v. albidos, 3 ped. diametro, in montibus scopulosis efformans. *Caules* densissime compacti, ramosi, cum foliis arctissime imbricatis $\frac{3}{4}$–2 poll. diametro, ramulorum apicibus mammæformibus. *Folia* subhorizontaliter patentia, late obcuneata,

in petiolum late linearem angustata, apice irregulariter crenulata, apicibus recurvis, lana adempta membranacea, ecostata, subflabellatim nervosa, ultra medium dense lanuginosa. *Capitula* in apicibus ramulorum subsolitaria, sessilia, ad $\frac{1}{3}$ poll. diametr. *Involucrum* subhemisphæricum, heterogamum; foliola 1–2-seriata, numerosa, anguste linearia, libera. *Receptaculum* angustum, papillosum. *Fl. radii* ♀, sub-2-seriales, corolla breviter tubulosa, cylindracea, 5-dentata. *Pappus* 1-serialis, setis basi liberis, æquilongis tenuibus rigidis scaberulis, superne subclavellatis. *Stylus* longe exsertus, ramis elongatis linearibus obtusis papillosis. *Fl. disci* ♂, numerosi, corolla infundibuliformi 5-dentata. *Stamina* 5, filamentis sub apice dilatatis; antheræ connatæ, lineares, breviter 2-auriculatæ. *Pappus* et *styli* rami ut in fl. ♀. *Achenium* lineari-oblongum, glabrum, compressum, ecostatum.

Fig. 1. Leaf with the wool removed. 2. Flower of ray. 3. Pappus hair. 4. Ray corolla and style. 5. Flower of disk. 6. Stamen.

HAASTIA SINCLAIRII, *Hook. f. l. c.*

Hab. New Zealand, Middle Island, on shingle beds, Wairau and Awatere Mountains, alt. 4–6000 ft., *Sinclair*. Mounts Darwin and Cook, *Haast*. Mounts Alta and Brewster, alt. 6000 ft., *Hector and Buchanan*.

Decumbens, laxe cæspitosa, ramulis adscendentibus foliosis. *Folia* $\frac{1}{2}$–$\frac{3}{4}$ poll. longa, obovato-oblonga v. -rotundata, obtusa, integerrima, plana, 5–7-nervia, lana sordide albida dense obsita. *Capitula* in apices ramulorum sessilia v. breviter pedunculata, $\frac{1}{3}$–1 poll. diametro. *Involucri* bracteæ exteriores breves, lanuginosæ, interiores lineari-obovatæ, acutæ, longe ciliatæ. Cetera fere ut in *H. pulvinari*.

The genus *Haastia* was named after that most indefatigable explorer of the geology, geography, and botany of the Middle Island of New Zealand, Julius Haast, F.R.S. It consists of three New Zealand plants, the two species here figured, and the *H. recurva*, which is distinguished by its obovate-spathulate, recurved, laxly-imbricating leaves and pappus hairs combined at the base. Its affinities are with *Helichrysum*, *Gnaphalium*, and *Raoulia*, differing from all by its remarkable habit and the absence of tails at the base of the anthers.—J. D. Hooker.

Fig. 1. Involucral scale. 2. Flower of ray. 3. Corolla and style of the same. 4. Arms of style of the same. 5. Flower of disk. 6. Pappus hair. 7. Stamen. 8. Arms of style of the same.

Plate 1004.

ALLANBLACKIA FLORIBUNDA, *Oliv.*

Guttiferæ.

A. floribunda, *Oliv. in Journ. Linn. Soc.* x. 42.

Hab. Cameroons River, *G. Mann*.

Arbor 40-pedalis (Mann. in sched.), glaberrima. *Rami* teretiusculi v. obscure tetragoni, læves, glabri. *Folia* coriacea, petiolata, elliptico- v. ovato-oblonga, apiculata v. breviter acuminata, acuta, basi plus minus (interdum late) rotundata, integra, supra lucida, subtus subopaca, costa subtus prominente, venulis secundariis prominulis subparallelis, 4–6 poll. longa, $1\frac{1}{4}$–$2\frac{1}{2}$ poll. lata; petiolus $\frac{1}{4}$–$\frac{1}{2}$ poll. longus. *Inflorescentia* v. axillaris rachide foliifera producta, v. terminalis paniculatim v. umbellatim racemosa, foliis floriferis minoribus bracteiformibus apicem versus ramorum approximatis. *Flores* dioici, majusculi, diametro $1\frac{1}{2}$–2 poll., in axillis solitarii v. geminati, longiuscule pedunculati, pedunculis rectiusculis 1–$2\frac{1}{2}$ poll. longis. *Sepala* coriacea, late imbricata, ovato-rotundata v. orbicularia, concava, exteriora $\frac{1}{4}$ poll. longa, interiora duplo majora margine scariosa. *Petala* obovata, basin versus cuneata, $\frac{3}{4}$-1 poll. longa, per anthesin patentia.—D. Oliver.

Fig. 1. Phalange of stamens and corrugated lobe of disk of male flower. 2. Anther and free portion of filament detached,—front and back view. 3. Female flower. 4. Transverse section of ovary. 5. Portion of placenta and ovules. 6. Immature fruit.

Plate 1005.

CHAUNOCHITON LORANTHOIDES, *Benth.*

Olacineæ.

Chaunochiton, *Benth. in Benth. et Hook. Gen. Pl.* 996.

Hab. Along streams near Barra do Rio Negro, North Brazil, *Spruce, n.* 1373.

Arbor 30-pedalis, ramis sæpe fastigiatis, ex omni parte glabra. *Folia* alterna, ovata obtusa v. obtuse acuminata, in petiolum brevem contracta, integerrima, coriacea, 3–4-pollicaria. *Flores* pallide flavicantes, in cymis densis confertim paniculatis v. subcorymbosis sessiles v. brevissime pedicellati. *Calyx* per anthesin parvus, minute 5-dentatus, post anthesin valde auctus, laxe cupulatus, fere pollicem diametro. *Corolla* tenuis, 2–$2\frac{1}{2}$-pollicaris. *Stamina* petalis paullo breviora, filamentis coccineis, antheris parvis flavicantibus. *Stylus* corollam subæquans, cum stigmate coccineus. *Drupa* 6–9 lin. diametro, endocarpio duro, exocarpio tenuissimo.

This plant, of which the full generic character will be found in the above-quoted Genera, bears, in the dried specimens, and, according to Mr. Spruce, in the fresh state, so much resemblance to a *Loranthus*, that in the hasty sorting of the Sprucean collection it was distributed as *Loranthus*, n. 22, and the more readily as the scar left by the style on the top of the drupe is exactly like that left by a deciduous corolla on an inferior fruit. It is, however, as observed by Mr. Spruce, a terrestrial tree by no means parasite, and the ovary is really superior, and on dissection of the flowers and fruit it proved to have all the characters of *Olacineæ* of the tribe *Olaceæ*, with, however, the ovary, as far as we have been able to ascertain, perfectly 2-celled. That, however, occurs in most species of *Strombosia*, and, apparently, in some species of

Heisteria. The form of the calyx, corolla, and anthers are sufficient to distinguish *Chaunochiton* from either of these genera.—G. Bentham.

Fig. 1. Bud. 2. Expanded flower. 3. Petal and stamen. 4. Three anthers with the summit of their filaments. 5. Ovary and style. 6. Vertical section of the ovary. 7. Transverse section of the same. 8. Fruiting calyx enclosing the drupe. 9. Drupe. 10. Vertical section of the drupe and seed.

Plate 1006.

PLEUROCARPÆA DENTICULATA, *Benth.*

Compositæ.

P. denticulata, *Benth. Fl. Austral.* iii. 460.

Hab. Islands of the Gulf of Carpentaria, North Australia, *R. Brown.*

Herba glabra, basi verisimiliter perennis, ramis duris divaricatis v. decumbentibus, specimina nostra ultrapedalia. *Folia* alterna, ovata v. elliptica, mucronato-acuta, in petiolum perbrevem angustata, majora 2-pollicaria v. longiora, margine acute irregulariterque denticulata, summa minora integraque. *Pedunculi* terminales, solitarii v. gemini, 1–2 poll. longi v. post anthesin elongati, sub capitulo leviter incrassati. *Involucrum* 4 lin. longum, basi dilatatum, bracteis lato-lanceolatis acuminatis imbricatis. *Flosculi* 10–20, cæruleo-purpurei, tubo involucrum excedente sæpe incurvo, limbi lobis 5 angustis æqualibus. *Antheræ* basi sagittatæ, auriculis breviter apiculatis. *Stylus Vernoniæ*. *Achenia* crassa, costis prominentibus leviter glandulosis. *Pappi* setæ 2–5, breves, rigidæ, caducissimæ.

This plant is only known from Brown's specimens, one of which, with the tracing of a drawing by Bauer, was given to me at Vienna in 1837, and of which I have since seen others in Brown's herbarium. Although very distinct in habit from most *Vernonieæ*, the style places it clearly in that tribe, where it is nearest allied to *Decaneurum*, and not indeed so far removed as I had at first thought from *Vernonia* itself, for it appears from the researches of Schultz-Bipontinus that in several sections of the latter genus the anthers are sagittate and almost tailed at the base.—G. Bentham.

Fig. 1. Floret. 2. Two of the anthers. 3. Upper portion of the style. 4. Fruit. 5. One of the bristles of the pappus.

Plate 1007.

HYDROLYTHRUM WALLICHII, *Hook. f.*

Lythrarieæ, § Ammannieæ.

H. Wallichii, *Hook. f. in Benth. et Hook. Gen. Pl.* 777.

Hab. Tavoy, *Gomez* (*Wall. Cat. n.* 9059).

Herba gracilis, debilis, aquatica, *Myriophylli* habitu, glaberrima, caule laxe ramoso, spithamæa et ultra, ramulis 4-gonis. *Folia* verticillata, inferiora submersa in verticillo plurima, anguste linearia, pollicaria, superiora sensim in verticillo pauciora brevioraque, summa parva, 4–6-na, oblonga, obtusa, integerrima, breviter petiolata. *Flores* in axillis foliorum superiorum sessiles v. breviter pedunculati, minuti, albi, pedicellis folio basi adnatis 2-bracteolatis, bracteolis setaceis. *Calyx* campanulatus, membranaceus, 4-gonus, 4-lobus, dentibus accessoriis 0. *Petala* 4, inter dentes calycis inserta, oblonga, obtusa. *Stamina* 4, tubo calycis inserta, filamentis filiformibus; antheræ didymæ. *Glandulæ* hypogynæ 8, liberæ v. per paria v. varie connatæ, obtusæ, ovarii basin cingentes. *Ovarium* parvum, calyce inclusum, oblongum, 2-sulcatum, 2-loculare; stylus breviusculus, superne dilatatus, stigmate capitato subdiscoideo, 4-lobo; ovula parva, placentis basin versus loculorum septis adnatis inserta, adscendentia. *Capsula* minuta, membranacea, subglobosa, calyce cincta, 2-locularis, 3–4-sperma. *Semina* suberecta, imbricata, obovoidea, plano-convexa, testa coriacea.

Fig. 1. Whorl of upper leaves and flowers. 2. Leaf and flower. 3. Flower laid open. 4. Stamen. 5. Hypogynous glands. 6. Pistil. 7. Transverse section of the same. 8. Immature seed.

Plate 1008.

ALSODEIOPSIS MANNII, *Oliv.*

Olacineæ.

A. Mannii, *Oliv. in Journ. Linn. Soc.* x. 43.

Hab. Mount John, Kongui river, West Tropical Africa (n. 1805), *G. Mann!*

Frutex 15-pedalis. *Ramuli* tenues, teretiusculi, strigilloso-pubescentes. *Folia* tenuiter coriacea, obverse lanceolata v. oblanceolato-oblonga, acuminata, basi angustata at obtusa, margine obscure undulata, supra glabra lucida venosa, infra secus costam mediam nervosque prominentes strigillosa, 5–9 poll. longa, 2–2½ poll. lata; petiolus brevissimus, 1–2 lin. longus. *Flores* parvi, circiter 1½ lin. longi, in cymas corymbosas axillares paucifloras breviter pedunculatas ½–1 poll. longas dispositi; pedicelli flores subæquantes, strigilloso-hirsuti. *Fructus* (exsicc.) pollicem longus, ⅓ poll. latus.—D. Oliver.

Fig. 1. Bud. 2. Expanded flower. 3. Stamens. 4. Pistil. 5. Vertical section of ovary. 6. Fruit. 7. Same laid open. 8. Seed. 9. Vertical section of same.

Plate 1009.

PACHYCLADON NOVÆ-ZELANDIÆ, *Hook. f.*

Cruciferæ, § Lepidineæ.

P. Novæ-Zelandiæ, *Hook. f. Handb. N. Zeal. Fl.* 724. Braya Novæ-Zelandiæ, *Hook. f. l. c.* 13.

Hab. New Zealand, Otago Province on schisty débris, Mount Alta and other heights in the Lake district, *Hector and Buchanan.*

Herba depressa, pilosula, acaulis v. caudice brevissimo crasso ramoso, radice longissime fusiformi in planta juvenili apice monocephalo, provectiore multicipiti, ramulis crassitie pollicis cicatricibus creberrime notatis. *Folia* dense rosulata, $\frac{1}{8}$–$\frac{1}{2}$ poll. longa, crassiuscula, oblonga, pinnatifida, in petiolum planum angustata. *Scapi* numerosi, infra folia orti, breves, $\frac{1}{3}$ poll. longi, adscendentes, 1–2-bracteati, bracteis digitatim lobulatis, 3–5-flori. *Flores* ignoti. *Siliquæ* breviter pedicellatæ, $\frac{1}{6}$–$\frac{1}{5}$ poll. longæ, lineari-oblongæ, utrinque obtusæ, septo imperfecto contrarie compressæ; valvæ subcymbiformes, carinatæ, nervis obscuris; stylus brevissimus, stigmate subcapitato 2-lobo. *Semina* in quovis loculo 3–5, obovoidea, funiculo brevi; cotyledones incumbentes.

A very curious little plant, intermediate in technical characters between the tribes *Sisymbrieæ* and *Lepidineæ*, but I think referable to the latter, and probably allied to *Notothlaspi*, though the valves are altogether wingless.—J. D. Hooker.

Fig. 1. Leaf. 2 and 3. Pods. 4. The same, with the valves removed. 5. Seed. 6. Embryo. 7. The same, cut transversely.

Plate 1010.

ANONA MANNII, *Oliv.*

Anonaceæ.

A. (§ Guanabani) **Mannii,** *Oliv., sp. n.;* foliis subsessilibus membranaceis v. tenuiter coriaceis obovato-oblongis vel ellipticis breviter et latiuscule apiculatis basi anguste cordatis, supra lucidis subtus opacis; floribus crasse coriaceis in cymis racemosis validis simplicibus v. pauciramosis dispositis, bracteis obovato-rotundatis, pedicellis angulatis bibracteolatis, petalis subæqualibus puberulis interioribus leviter æstivatione imbricatis.

Hab. Old Calabar River, *G. Mann!*

Arbor 30–40-pedalis (*fide sched. Mann*). *Ramuli* teretiusculi, novelli minute ferrugineo-puberuli. *Folia* ampla, alterna, margine obscure undulata, utrinque glabra, vernatione autem subtus pilis ferrugineis minutissimis sparsis puberula, costa in pagina inferiori valida, venis primariis subdistantibus marginalique anastomosanti prominentibus. *Flores* diametro 2–3 poll. in cymis

racemosis 6–9 poll. longis dispositi; pedunculus angulatus, primum ferrugineo-pubescens, deinde glabrescens; bracteæ $\frac{1}{4}$–$\frac{1}{2}$ poll. longæ, floribus oppositæ; pedicelli crassi, $\frac{1}{2}$–$\frac{3}{4}$ poll. longi, bracteolas oppositas rotundatas alabastrum primum includentes gerentes. *Sepala* crassa, late ovata, basi cuneata, extus ferrugineo-puberula, intus glabra tuberculata, æstivatione valvata. *Petala* crassissima, coriacea, biseriata, sessilia, subæqualia, late elliptica vel obovato-elliptica, obtusa v. obtuse acutata, minutissime sericeo-puberula; petala interiora æstivatione leviter imbricata. *Receptaculum* conicum, basi antheras gerente dilatatum. *Stamina* numerosa, 3–4-seriata, imbricata; antheræ sessiles, oblongo-cuneatæ, biloculares, loculis extrorsum longitudinaliter dehiscentes, connectivo truncato dilatato recurvato puberulo. *Carpella* numerosissima; ovariis in toro immersis; stylo crassiusculo angulato sursum clavatim dilatato; stigma obtusum, hexagonum. *Ovula* solitaria, erecta. *Fructum* non vidi.—D. Oliver.

Fig. 1. Torus, bearing the densely crowded styles upon the upper conical portion, and the stamens upon the dilated base. 2. Stamen, front view. 3. Same, side view. 4. Style and stigma with immersed uniovulate ovary. A bud, unnumbered, is shown, from which the sepals and outer petals have been removed, showing the imbrication of the inner petals.

Plate 1011.

SENECIO TROPÆOLIFOLIUS, *M'Owan.*

Compositæ, § Senecionideæ.

Hab. South Africa, in grassy and rushy places on mountain sides near Graham's Town, *P. M'Owan.*

Herba glaberrima, glaucescens, caule gracili basi fruticuloso. *Folia* 1 poll. diametro, gracile petiolata, petiolo pollicari, peltata, late ovato-orbicularia, sinuato-angulata, acuta, angulisque acutis, carnosula, siccitate submembranacea, nervis tenuibus obscuris radiantibus. *Scapi* solitarii, graciles, stricti, erecti, 8–10 poll. alti, 1–2-cephali, bracteis paucis minutis linearibus remotis instructi. *Involucrum* campanulatum, ecalyculatum; bracteæ 10–12, $\frac{1}{4}$ poll. longæ, discum æquantes, anguste lineares, acuminatæ, virides, apicibus non sphacelatis, marginibus tenuiter membranaceis. *Flores radii* ad 8, flavi, lineari-ligulati, apice denticulati. *Flores disci* 10–20. *Achenium* glaberrimum, striatum. *Pappus* tenuissimus, albus, scaberulus.

A very pretty and distinct species, allied, as Mr. M'Owan points out, to *S. paucifolius*, DC., and *S. oxyriæfolius*, DC., but differs from the former in the peltate leaves, and from the latter in the radiate flowers. The plant is living in the Royal Gardens, Kew, specimens having been sent from the Graham's Town Botanic Garden. The first description of it appeared in an article by Dr. Mueller, entitled, "VI. Characteristics of an undescribed *Senecio* from South Africa," of which he has favoured us with a copy, and which is, I presume, extracted from the Proceedings of the Royal Society of Victoria.—J. D. Hooker.

Fig. 1. Flower of ray. 2. Style-arms of ditto. 3. Flower of disk. 4. Style-arms of ditto. 5. Pappus hair.

Plate 1012.

THAMNEA DEPRESSA, *Oliv.*

Bruniaceæ.

T. depressa, *Oliv. in Journ. Linn. Soc.* ix. 332; procumbens, glabra, ramulis floriferis brevibus v. brevissimis (floribus quasi axillaribus) numerosis adscendentibus subfastigiatis, foliis minutis adpressis imbricatis ovatis deltoideisve trigonis obtusiusculis, involucralibus conformibus nuce monosperma ellipsoideo-truncata leviter sulcata paulo brevioribus, ovario imperfecte biloculari, ovulis in utroque loculo geminatis.

Hab. Cape; Baviaan's Kloof, Genadendal, *Burchell! in Herb. Kew* (n. 7678).

A low, intricately branched shrub of 6–9 inches.

I have entirely failed to detect the embryo in the seeds which I have opened.—D. Oliver.

Fig. 1. Flower and involucral leaves. 2. Flower isolated. 3. Petal. 4. Stamen. 5. Inferior ovary and style. 6. Vertical, and 7, transverse sections of ovary. 8. Fruit and surrounding leaves. 9. Transverse section of same. 10. Leaves.

Plate 1013.

THAMNEA UNIFLORA, *Sol.*; var. HIRTELLA.

Bruniaceæ.

T. uniflora, *Sol.*, var. *hirtella;* decumbens, ramulis floriferis adscendentibus fastigiatis sparsim pilosulis, foliis lanceolatis trigonis obtusis imbricatis laxe adpressis, involucralibus lineari-lanceolatis pilosis ciliatisve apice subpatentibus recurvisve, ovario biloculari (vel dissepimento interdum imperfecto).—*Thamnea hirtella*, Oliv. in Journ. Linn. Soc. ix. 332.

Hab. Cape: on Witsenberg, near Tulbagh, *Burchell! in Herb. Kew* (n. 8685).

A shrub, varying probably from 6 inches to 1 or 2 feet in height, with ascending or procumbent branches, emitting very numerous, fastigiate, unequal, densely leafy ramuli, repeatedly divided, each ultimate, often very short, division bearing a terminal flower. At first I regarded this plant as specifically distinct from *T. uniflora*, and so described it, but on further examination, I cannot maintain this claim.—D. Oliver.

Fig. 1. Leaves. 2. Involucral leaf. 3. Flower and surrounding leaves. 4. Flower, the petals and stamens removed. 5. Inferior ovary and style. 6. Petal. 7. Stamens. 8. Vertical section of ovary.

Plate 1014.

BERZELIA CALLUNOIDES, *Oliv.*

Bruniaceæ.

B. (§ Mniothamnea) **callunoides,** *Oliv. in Journ. Linn. Soc.* ix. 333.

Hab. Cape of Good Hope. Craggy Peak, near Zwellendam (n. 7382), and Mountain, near Valley-Rivier's Poort (n. 7097, 7116), *Burchell in Herb. Kew.*

Fruticulus ½–2-ped., ericoideus, adscendens v. erectus v. ramis inferioribus procumbentibus, ramosus, diffusus, ramulis lateralibus divisis et subdivisis intricatis v. subfastigiatis, floriferis sæpe brevissimis, teretibus dense hirtello-tomentosis, foliis minutis spiraliter dispositis sæpius imbricatis undique tectis. *Folia* ovata v. in ramis sterilibus lanceolata, crassiuscula, integra, apice acuta v. acutiuscula, ustulata, dorso convexa, utrinque pilosa v. glabrata, ½–1 lin. (in ramulis sterilibus interdum 1½ lin.) longa. *Flores* inconspicui, pilosi (intus rubri), in axillis foliorum sessiles v. terminales folia vix superantes; axillares bibracteolati, bracteolis subulatis pilosis calycem æquantibus. *Calyx* tubo obconico piloso ovario adnato, limbo fere ad basin 5-partito, lobis deltoideo-lanceolatis, intus glabris, dorso et margine pilosis. *Petala* lobis calycinis alterna, iisdem duplo longiora, sessilia, ovato- v. elliptico-oblonga, cymbiformia v. planiuscula, intus basi tuberculo incrassato cuneato instructa, æstivatione valvata. *Stamina* 5, perigyna, tubo calycis inserta, petalis alterna, iisdem paulo breviora; filamentis lineari-subulatis apice per anthesin incurvis; antheris ovatis v. rotundatis bilocularibus dorso basin versus affixis, loculis longitudinaliter dehiscentibus. *Ovarium* semi-inferum, uniloculare, apice liberum, pilosum, in stylum simplicem glabrum leviter sulcatum attenuatum; ovulum unicum, anatropum, pendulum. Semen maturum non examinavi.—D. Oliver.

Fig. 1. Extremity of flowering branchlet. 2. Single flower and bracts. 3. Same, the petals and stamens removed. 4. Vertical section of flower. 5. Stamens. 6, 7. Leaves.

Plate 1015.

ALSOPHILA REBECCÆ, *F. Muell.*

Filices.

A. Rebeccæ, *F. Muell. Fragm. Phyt. Austr.* v. 53; frondibus bipinnatis; pinnis lanceolatis rachidibus castaneis subnudis; pinnulis linearibus basi cordatis marginibus inciso-crenatis, facie superiore nuda, inferiore purpuracea, venis confertis parce pinnatis, soris medialibus.

Hab. Rockingham Bay, Queensland, *Hill, Dallachy.*

Caudex 8 ped. altus, gracilis. *Lamina* bipinnata. *Rachis* castaneus, parce fibrillosus, muricatus, punctis paucis elevatis. *Pinnæ* inferiores 12–15 poll. longæ, 4–5 poll. latæ, lanceolatæ. *Pinnulæ* 20–30-jugæ, inferiores petiolatæ,

2–3 poll. longæ, 3–4 lin. latæ, apice acuminato, marginibus inciso-crenatis, basi cordata subauriculata. *Pagina* subcoriacea, supra glabra, infra paleis membranaceis minutis conspersa. *Venæ* pinnatæ; venulæ bijugæ. *Sori* mediales, inter costam et marginem biseriales.

A very interesting addition to the Tree-ferns of Australia. It does not come near any of the other Australian or Polynesian species. Its closest ally is the Chinese *A. podophylla*, which has broader pinnules with more distinctly-rounded lobes, veins not so close and more copiously pinnate, the lower ones usually in groups of eight, and wants altogether the scattered furfuraceous scales of the under surface, which sometimes subtend the sori like the involucre of a *Hemitelia*.—J. G. Baker.

Fig. 1. Portion of fertile pinnule. 2. Sporangium.

Plate 1016.

SCHIZÆA SPRUCEI, *Hook.*

Filices.

S. Sprucei, *Hook. mss.*; caule rigido erecto dense fibrilloso, fronde ligulata crassa canaliculata apice palmato-furcata, segmentis fertilibus pedicellatis spiraliter recurvatis, spicis numerosis elongatis confertis.

Hab. Brazil; banks of the Rio Negro, above the mouth of the Casiquiare, 1854, *R. Spruce*, 3752.

Caudex lignosus, suberectus. *Petioli* conferti, rigidi, erecti, 9–12 poll. longi, paleis densis squarrosis fibrillosis brunneis vestiti. *Lamina* 6–8 poll. longa, ligulata, crassa, verticaliter canaliculata, 3–4 lin. lata, nitida, glabra, basin versus contracta; segmenta fertilia 1–6, longe pedicellata, 1½ 2 poll. longa, spiraliter recurvata. *Spicæ* numerosæ, 4–7 lin. longæ, infra tomentosæ.

A new and very elegant species of the same group (*Lophidium*) as *S. dichotoma* and *elegans*, with the fronds flabellately divided only at the summit of the barren portions, and quite different in the fertile segments.—J. G. Baker.

Fig. 1 and 2. Portions of fertile segment. 3. Sporangium.

Plates 1017, 1018.

SINDORA WALLICHII, *Benth.*

Leguminosæ.

S. Wallichii, *Benth., sp. n.?*; foliolis (sub-2-pollicaribus) obovato-oblongis subellipticisve obtusis retusis v. breviter obtuse acuminatis demum glabratis.—Guilandina Wallichiana, *Grah. in Wall. Cat. Herb. Ind. n.* 5805. Echinocalyx, *Benth. in Benth. et Hook. Gen. Pl.* 584.

Hab. Singapore, *Wallich.* Malacca, *Griffith.*

Arbor, inflorescentia foliis ramulisque novellis pube tenui tomentosa subrufescente vestitis, foliis demum glabrescentibus. *Folia* abrupte pinnata; foliola 2–3-juga, opposita, breviter petiolulata, obovali- v. ovali-oblonga v. subelliptica, obtusa retusa v. obtuse acuminata, nunc omnia infra 2 poll. longa, nunc 2–3-pollicaria, coriacea, costa marginibusque nerviformibus subtus prominentibus, venis primariis tenuibus, venulis minute crebreque reticulatis in pagina præsertim superiore sub lente eleganter foveolata conspicuis. *Stipulæ* inconspicuæ. *Flores* secus ramos paniculæ terminalis late pyramidatæ secundi, breviter pedicellati. *Calyx* circa 4 lin. longus, setis crassiusculis mollibus echinatus; tubo brevissimo lato, laciniis 2 summis in labium superius concavum connatis. *Petalum* summum calyci subæquilongum, sessile, oblongum, concavum, ciliato-hirsutum, 4 inferiora minuta rudimentaria v. 0. *Stamina* 10, calyce longiora, basi declinata, oblique breviterque monadelpha, dein ascendentia, apice subinvoluta, infra medium hirtella. *Ovarium* breviter stipitatum, hirsutum, breve, in stylum longum superne involutum attenuatum, 2-ovulatum. *Legumen* oblique orbiculare v. late ovatum, 2–3-pollicare, planum, crasso-coriaceum, 2-valve, valvibus aculeis rigide conicis conspersis. *Semina* nobis ignota.

The flowering specimens, one of which is here figured, had long been extensively distributed from Griffith's Malacca collection as an apparently new and remarkable genus, which I first described as such in the 'Genera Plantarum,' under the name of *Echinocalyx*, the fruit being then unknown to me. In reading over, however, Miquel's description of his *Sindora*, only known in fruit, I thought it possible that the two plants might be congeners, although the size, shape, and glabrosity of the leaves seemed to indicate a distinct species, but as without further information this approximation could only be conjectured, I did not venture to unite them. Since that we received from the Calcutta Garden, under the name of *Sindora Siamensis*, a specimen in fruit, which at once reminded me of one of Wallich's *Guilandinas*, and on turning to this specimen (from Singapore), I found it was evidently conspecific with Griffith's plant, with leaflets of the same shape and size. Concluding, therefore, that it was a congener of Miquel's *Sindora*, but possibly a different species, I adopted Graham's specific name for it. I have now, however, met with another of Wallich's Singapore specimens, probably from the same tree, with leaves much nearer to those described by Miquel, whilst the Siam specimen from Calcutta has the leaflets shaped as in Griffith's, but of the size described by Miquel. Further specimens may therefore show that there is but one species, for which Miquel's name, *S. Sumatrana*, would have to be adopted as the oldest; the union would, however, at present be premature. The genus is nearest allied to *Copaifera*, although abundantly distinct in calyx, petals, and stamens, and in the prickles of the pod.—G. Bentham.

Fig. 1. Flower. 2. Perfect upper petal. 3. One of the lower rudimentary petals. 4. Ovary and style. 5. Vertical section of the ovary. 6. Stamen. 7. Diagram of the flower.

Plate 1019.

LIQUIDAMBAR ORIENTALIS, *Mill.*

HAMAMELIDEÆ.

L. orientalis, *Mill.; DC. Prod.* xvi. 158; foliis sparsis palmati-quinquefidis (rarius tri- v. septem-fidis) serrulatis, subtus glabris v. axillis nervorum leviter barbatis, lobis oblongo- vel obovato-quadratis acutis v. obtusiusculis, lobulis lateralibus 1 v. 2 oblique deltoideis obtusis acutisve utrinque auctis; fructu inappendiculato calycis limbo inter capsulas haud prominulo continuo v. leviter corrugato.—*L. imberbe*, Ait.

The only wild specimens which I have seen are from Asia Minor, from the coast opposite to the island of Rhodes, presented to the Kew Herbarium by Mr. Hanbury. Specimens from the Botanic Gardens of Venice, Marseilles, and St. Maudrier, near Toulon, are in the same herbarium, and agree with the wild ones, excepting, as Mr. Hanbury observed to me, in having the leaves wholly glabrous; that is, without the hairy tufts in the axils of the principal nerves on the under side of the leaf, which are noticeable in the indigenous specimens.

The only good figure hitherto of this long-known tree accompanies a valuable memoir by Mr. Hanbury, in the 'Pharmaceutical Journal' (March, 1867), "On the Origin and Preparation of Liquid Storax." It is a species of peculiar interest as being, like *Platanus orientalis*, the solitary outlier of a small genus, the other species of which occur only in North America and (in the case of *Liquidambar*) Eastern Asia. Both *Liquidambar* and *Platanus*, moreover, there is reason to believe, were prevalent in Central Europe during the Miocene period.

Although, as Dr. Hance observes (Seemann's Journ. Botany, 1867, p. 113), there can be little doubt that *L. styraciflua* and *L. orientalis* are derivative forms from one parent type, yet in the rather numerous specimens which I have seen dried, or growing in the Royal Gardens, the differences between the two are generally so obvious, that I think they cannot be regarded as conspecific in any usual, or useful, application of the term.* I append a diagnosis of *L. styraciflua* for comparison.

L. styraciflua, *L.; DC. Prod.* xvi. 157; foliis sæpius ad apices ramorum v. ramulorum brevium lateralium fasciculatis, palmati-quinquefidis (rarius tri- v. septem-fidis), serratis, subtus in axillis nervorum barbatis, lobis ovato-lanceolatis acutis v. acuminatis indivisis (rarissime utrinque lobulo laterali); fructu præcedentis.

This description is based upon specimens from various States of the North American Union. It is not a little remarkable, as Dr. Hooker pointed out to me some time ago, that the specimen labelled *L. imberbe*, Ait., distributed by the late Dr. Kotschy, and collected in the garden of the Monastery of

* It is but fair to observe that there is in the Kew Herbarium a solitary leafy specimen of *L. styraciflua*, without locality, which combines, to some extent, the characters of the two.

Antiphonitos, in the island of Cyprus, should belong to the American species, *L. styraciflua*. The leaves are tufted, their lobes undivided, and the lower nerve-axils hairy. The only certainly-known indigenous locality that I am aware of for *L. orientalis*, is that cited above.—D. Oliver.

Fig. 1. Flowering branch. 2. Male flower. 3. Stamen. 4. Styles, surrounded by disk and staminodes. 5. Fruiting branch. 6. Section of capitate fruit.

Plate 1020.

LIQUIDAMBAR FORMOSANA, *Hance*.

Hamamelideæ.

L. Formosana, *Hance in Ann. Sc. Nat. Ser.* 5. v. 215; foliis plerumque in ramulis brevibus lateralibus fasciculatis, trilobis serrulatis subtus sparsim pilosulis et in axillis nervorum obsolete barbatis, lobis latiuscule ovatis in acumen gracillimum productis, basi cordatis, lobis lateralibus patentibus; fructu spinis pluribus (stylis induratis capituli similibus) e limbo calycino inter capsulas oriundis armato.

Hab. Formosa, *Oldham!* (n. 88–1, Kew Distribution).

Dr. Hance, in a memoir on this plant (Seemann's Journ. Bot. 1867, p. 110), written subsequent to his original description of it, after recording its occurrence on the mainland of South China, and pointing out the variability of the leaves in respect of lobing and pubescence, goes on to identify it with *Liquidambar styraciflua* of North America. It is, however, due to this careful botanist to remark, that his identification was based, not upon specimens, but upon a comparison of the Chinese plant with the plate in Hayne's 'Gewächse' (xi. t. 25*) of *L. styraciflua*. The difference between the two is slight so far as the foliage is concerned, but the fruits are very diverse. While in both *L. styraciflua* and *L. orientalis* the margins of the adherent calyces of the capitula are but slightly corrugated or crenate, the limb being all but obsolete, in *L. Formosana* each capsule is surrounded at short intervals by long spines, produced from the calyx-limb, which are not at first sight readily distinguishable from the persistent indurated styles which terminate the valves of each capsule.—D. Oliver.

Fig. 1. Female inflorescence. 2. Styles surrounded by subulate processes of the disk and staminodes. 3. Staminode. 4. Vertical section of ovary. 5. Attached fruit-head. 6. Single mature fruit, dehiscing. 7 and 8. Abortive, and 9 and 10, perfect seeds. 11. Section of seed. 12. Embryo.

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* The ovules are represented as attached to the dorsal suture of the carpels.

PLATE 1021.

MELLISSIA BEGONIFOLIA, *Hook. f.*

SOLANEÆ.

Mellissia, *Hook. f. gen. nov.*—*Calyx* subcampanulato-pateriformis, ad medium inæqualiter 5-lobus v. 3–4-lobus, lobis 1 v. 2, 2-dentatis, interdum 2-labiatis, æstivatione apertis, angulis non plicatis. *Corolla* late campanulata, subæqualiter 5-loba; lobi ovato-oblongi, obtusi, induplicato-valvati apicibus leviter imbricatis, non plicati. *Stamina* 5, basi tubi corollæ inserta, inclusa, subæquilonga, filamentis filiformi-subulatis pilosis; antheræ breviter oblongæ, primum extrorsæ, demum versatiles. *Ovarium* globoso-ovoideum, sessile, 2-loculare, basi disco obscuro adnato cinctum, in stylum filiformem abrupte attenuatum, stigmate capitellato obscure 2-lobo; ovula plurima, placentis crassiusculis septo adnatis affixa. *Bacca* parva, fusiformis, stylo basi articulato terminata, calyce accrescente patente stipata, 2-locularis, carne tenui, polysperma. *Semina* oblongo-reniformia, leviter compressa, testa crustacea granulata, albumine carnoso; embryo hemicyclicus, teres.—Frutex *graveolens, pubescenti-tomentosus, ramulis tortuosis.* Folia *petiolata, per paria sparsa, ovato-oblonga, obtusa, integerrima, recurva.* Flores *in axillis inter paria foliorum solitarii, pedicellati, nutantes, albi.* Corolla *extus tomentosa.*

M. begonifolia, *Hook. f.*—Physalis begonifolia, *Roxb. in Beatson's St. Helena Tracts, Appendix,* 317; *DC. Prod.* xiii. 1451. Boxwood *of the colonists.*

HAB. St. Helena, rocky hills in the east and south side of the island, *Roxburgh,* 1812–13. By the telegraph on Longrange Point, and Little and Great Stone Top Mountains, *Burchell* (Jan. 1807).

The first specimens (which were both in flower and fruit) I ever procured of this very rare and now probably extinct plant, were given me by Mr. Bennett, of St. Helena, on my second visit to that island in 1843; and I, at the time, wrote on the ticket that it was now extinct, no doubt on Mr. Bennett's authority. Fine specimens exist, however, in the Burchellian collections, together with a drawing of the plant, that represents a low scrubby bush, growing on rocky places. I have named the genus in honour of J. Melliss, Esq., surveyor and engineer of the colony, who has paid much attention to the botany of the island, and contributed many valuable specimens to this establishment.

The affinities of this interesting plant are not very clear to me in the present condition of the Order; it is, perhaps, nearest to *Withania*, but the very oblique calyx and the corolla are both very differently shaped, and the lobes of the latter are decidedly induplicate valvate with slightly imbricating tips.—J. D. HOOKER.

Fig. 1. Flower. 2. The same laid open. 3 and 4. Stamens. 5. Pistil. 6. Transverse section of the ovary.

Plate 1022.

HETERONEURON NIGRICANS, *Hook. fil.*

Melastomaceæ, § Miconieæ.

H. nigricans, *Hook. f. in Benth. et Hook. Gen. Pl.* 768.

Hab. Orinoco river, near Barra, in forests, *Spruce* (n. 1331). February, 1851.

Arbor excelsa, glaberrima, habitu *Lecythidis*, ramulis teretibus. *Folia* petiolata, 4–5 poll. longa, oblongo-lanceolata, recurva, integerrima, penninervia, nitida et fragillima (ex sched. Sprucei), siccitate nigra, nervis tenuibus remotiusculis; petiolo $\frac{1}{3}$ poll. longo. *Flores* in cymas parvas 2–4-floras breviter pedunculatas ramulis infra folia orti, pedunculis bracteolatis pedicellisque pallide-viridibus calycibusque albo-punctatis demum rubris. *Calycis* tubus hemisphæricus, $\frac{1}{4}$ poll. diametro, intus lævis; limbus cupularis, truncatus, ore subintegro. *Petala* 5, crasse coriacea, obtusa, demum reflexa, alba. *Stamina* 10, æqualia, alba, filamentis brevibus complanatis; antheræ magnæ, subreniformi-recurvæ, poro minuto dehiscentes, loculis profunde sulcatis, connectivo crasso basi non producto inappendiculato. *Ovarium* parvum, cum fundo calycis incrassato confluens, 5-loculare, vertice concavo glabrum; stylus columnaris, stigmate capitellato 5-lobo; ovula perplurima, placentis subglobosis ab axi loculorum adscendentibus affixa. *Bacca* pulposa, ∞-sperma. *Semina* minuta, anguste obovoidea, testa crustacea, raphe laterali incrassata, hilo basilari; embryo cylindricus, cotyledonibus plano-convexis.

A very remarkable plant, the pinnate venation of whose leaves is very rare in the Order to which it belongs; it has many characters in common with *Mouriria*, to which Spruce allies it doubtfully, but differs in the placentation and numerous seeds.—J. D. Hooker.

Fig. 1. Bud. 2. Vertical section of calyx and ovary. 3 and 4. Stamens. 5. Transverse section of an anther. 6. Immature fruit. 7. Transverse section of the same. 8 and 9. Seeds and embryo.

Plate 1023.

KALIPHORA MADAGASCARIENSIS, *Hook. f.*

Cornaceæ.

K. Madagascariensis, *Hook. f. in Benth. et Hook. Gen. Pl.* 951 (staminibus false descriptis).

Hab. Madagascar.

Frutex v. *arbor* glaberrima, nitida, siccitate fuscescens, potassio scatens, ramulis teretibus. *Folia* 2–4 poll. longa, alterna, oblique oblongo-lanceolata, acuminata, basi inæquilatera, integerrima, coriacea, nervis obscuris, utrinque nitida. *Flores* parvi, in paniculas parvas axillares nutantes dispositi, pedicellis bracteatis non articulatis. *Flores* unisexuales. *Fl.* ♂: *Calyx* parvus, 4-lobus. *Petala* 4, lineari-oblonga, coriaceo-carnosa, valvata

v. apicibus imbricatis. *Stamina* 4, filamentis brevissimis crassiusculis; antheræ lineari-oblongæ, 2-loculares, loculis medio profunde sulcatis, connectivo dilatato tenui ultra loculos paulo producto. *Discus* pulvinaris, obtuse 4-gonus. *Ovarii* rudimentum subulatum. *Fl.* ♀: *Calycis* tubus hemisphæricus, obtuse 4-gonus, dentibus 4 remotis. ***Petala*** . . . ***Staminum*** rudimenta 0. *Discus* hemisphæricus. *Ovarium* 2-loculare; styli 2, minuti, recurvi, discum coronantes, intus stigmatosi; ovula in loculis solitaria, linearioblonga. *Drupa* parva, compressa, didyma, 2-pyrena; pyrenæ crustaceæ, compressæ, 1-spermæ. *Semina* lineari-oblonga, pyrenæ conformia, testa membranacea, albumine carnoso; embryo albumini conformis, sed paulo angustior, cotyledonibus planis crassiusculis, radicula brevi crassa obliqua.

I take this opportunity, in figuring a very interesting and rare plant, of correcting the serious blunder into which I fell in describing it for the 'Genera Plantarum' as 8-androus, and hence anomalous in the Order. The stamens are very large indeed in the buds, which alone I had the opportunity of examining, occupying its whole cavity, the filaments not at all developed, and the broad membranous connective so agglutinated to the fleshy petals, that in every bud opened (and of these I opened many) the contiguous cells tore asunder, and, each cell having a very deep longitudinal furrow (dividing it on a transverse section into two apparently perfect cells), I regarded each half-anther as a whole one.

The petals seem to be normally valvate, but in some flowers their tips appear imbricate, and in one flower one of the petals seemed to overlap the contiguous one strongly; their substance is, however, so black, thick, and fleshy, the broad connectives of the anthers are so agglutinated to their surfaces, and the tips of the connectives especially cohere so closely with the apices of the petals, that it is extremely difficult to obtain a clear view of the relations of their parts, even on transverse sections of the bud. The ticket attached to the specimens is marked "Ravendo," probably the name of a locality, to which is added, "produces abundance of potash."—J. D. Hooker.

Fig. 1. Bud of male flower. 2. Male flower open. 3. Stamen. 4. Female flower. 5. Ripe fruit. 6. Vertical section of the same. 7. Seed. 8. The same cut vertically, showing the embryo.

Plate 1024.

LAMPROLOBIUM FRUTICOSUM, *Benth.*

Leguminosæ.

L. fruticosum, *Benth. Fl. Austral.* ii. 202.

Hab. Endeavour river, Queensland, *Banks and Solander* (in flower and fruit), *A. Cunningham* (in fruit only).

Frutex erectus, orgyalis, ramulis molliter pubescenti-hirtis. *Folia* pinnata; foliola 3, 5 v. 7, rarius in foliis summis solitaria, oblonga, obtusa v. mucronata, 1–2 poll. longa, coriacea, supra glabra v. pilis appressis con-

spersa, subtus sericco-pubescentia. *Pedunculi* breves, terminales axillares v. extra-axillares, omnes 1-flori in speciminibus suppetentibus, sed forte interdum racemos paucifloros ferentes. *Calyx* sericeo-villosus, 3–4 lin. longus, ei *Crotalariæ* accedens, profunde fissus, laciniis 2 summis in labium superius concavum connatis. *Petala* calycem non excedentia. *Stamina* monadelpha. *Legumen* planum, 1½-pollicare, 3–4 lin. latum, glabrum, læve. *Semina* transversa. *Embryo* rectus, radicula brevissima.

The aspect of this plant approaches that of some shrubby *Tephrosiæ*, near which A. Cunningham had placed it. The flower recalls that of several *Crotalariæ*, whence the provisional name or indication, *Crotalarioides*, in Brown's herbarium, whilst the pod, the seed, and especially the embryo, show a curious affinity with the American genera *Brongniartia* and *Harpalyce*.—G. Bentham.

Fig. 1. Flower. 2. Standard. 3. One of the wings. 4. Keel. 5. Stamens. 6. Anther. 7. Ovary. 8. Seed. 9. Embryo, side view. 10. Embryo seen from the edge. These details are taken from a flower and seed communicated by Mr. Bennett.

Plate 1025.

ELLIPEIA CUNEIFOLIA, *Hook. f. et Thoms.*

Anonaceæ, § Uvarieæ.

E. cuneifolia, *Hook. f. et Thoms. Fl. Ind.* i. 104.

Hab. Malayan Peninsula, Veruppa Tabong, near Malacca, *Griffith.*

Frutex forte scandens, ramulis ferrugineo-velutinis. *Folia* 6–8 poll. longa, 2–3 poll. lata, petiolo vix ¼ poll., anguste obovato-oblonga, abrupte acuminata, basin versus cuneato-angustata obtusa v. subcordata, coriacea, rigida, supra lucida et præter costam tomentosam glabra, subtus adpresse fulvo-tomentosa, nervis numerosis obliquis parallelis conspicuis. *Panicula* terminalis, laxa, ramosa, multiflora, plerumque aphylla. *Flores* dense tomentosi, bractea rotundata concava calyci appressa. *Sepala* 3, parva, rotundata, bracteam æquantia. *Petala* 6, rotundata, basi angustata, utrinque fulvo-tomentosa, imbricata; exteriora ¾ poll. longa, coriacea, convexa; interiora multo minora. *Torus* convexiusculus. *Stamina* ∞, linearia, connectivo truncato ultra antheras parallelas producto; carpella numerosa, strigosa, oblonga; stylus oblongus, pubescens; ovulum 1, globosum, suturæ ventrali supra medium insertum. *Carpella* matura oblonga, ⅔ poll. longa, longiuscule stipitata stipite 1¼ poll. longo, appresse tomentosa, supra medium uno latere mucrone parvo instructa.

A very anomalous *Anonacea*, on account of its solitary ovule attached to the middle of the ventral suture.—J. D. Hooker.

Fig. 1. Flower with outer petals cut through. 2. The same with petals removed. 3 and 4. Stamens. 5. Carpel. 6. The same cut vertically. 7. Ripe carpel. 8. The same cut vertically.

Plate 1026.

DAMPIERA TRIGONA, *De Vr.*

GOODENOVIEÆ.

D. (Diccelia) trigona, *De Vriese in Pl. Preiss.* i. 401; diffusa v. suberecta, glabra, ramis tenuibus angulatis, foliis lanceolatis linearibusve, ovario 2-loculari, ovulis linearibus erectis.—*D. biloculata*, F. Muell. Fragm. Phyt. Austral. ii. 17.

Hab. W. Australia, from the South Coast to Swan River, *Drummond*, *Preiss*, and others.

Herba glabra, perennis, caulibus diffusis adscendentibus v. suberectis acutangulis sæpius laxis tenuibusque rarius rigidioribus subalatis. *Folia* sessilia v. petiolata, haud crebra, lanceolata v. fere linearia, integerrima v. paucidentata, 1–2 poll. longa; infima interdum breviora latioraque, floralia summa in bracteas parvas abeuntia. *Flores* majusculi, cærulei, pedunculis in axillis superioribus gracilibus flexuosis ramosis in paniculam terminalem laxam dispositis. *Calycis* tubus apice constrictus, cum corollæ basi continuus, limbo obsoleto. *Corolla* 7–8 lin. longa, glabra v. pilis adpressis conspersa. *Ovarium* rectum, 2-loculare, ovulis in quoque loculo solitariis erectis linearibus. *Fructus* oblongus, rectus, ad 2 lin. longus, apice constrictus et corollæ basi circumscissim persistente coronatus. *Semina* subteretia.

This represents a very distinct section of *Dampiera*, consisting of two species, which, with the peculiar corolla, connate anthers, etc., of the genus, differ from all others in their ovary and fruit, 2-celled as in most species of *Scævola*. Both species are limited to Western Australia.—G. Bentham.

Fig. 1 and 2. Flowers. 3. The same, with the corolla removed, showing the stamens and style. 4. Two stamens. 5. Fruit. 6. The same, longitudinal section. 7. The same, transverse section.

Plate 1027.

DAMPIERA ALATA, *Lindl.*

GOODENOVIEÆ.

D. (Camptospora) alata, *Lindl. Swan River App.* 27; caule ancipiti v. 3-alato, foliis oblongis lanceolatisve, calycis tubo subgloboso lobis minimis sub indumento occultis, ovulo solitario hippocrepico.—*D. cauloptera*, DC. Prod. vii. 504; De Vriese, Gooden. t. 18. *D. trialata*, *D. epiphylloidea*, et *D. Lindleyi*, De Vr. in Pl. Preiss. i. 401, 402.

Hab. W. Australia, from the South Coast to Swan and Murchison rivers, *Drummond* and many others.

Herba perennis, dura, paucifoliata, inflorescentia excepta glabra v. leviter sericeo-pubescens. *Caules* erecti v. ascendentes, parum ramosi, 1–2-pedales, alis 2–3 a foliis decurrentibus nunc angustissimis nunc 2–3 lin. latis. *Folia* coriacea, nunc oblonga v. lanceolata integra v. dentata pollicaria v. longiora, nunc minima linearia v. ad squamas minutas reducta. *Pedunculi* in axillis superioribus solitarii v. gemini, 1-flori v. laxe 2–3-flori, bracteolis sub flore minutis. *Calyx* molliter villosus, tubo oblique subgloboso, lobis minimis sub indumento occultis. *Corolla* 6–9 lin. longa, pilis appressis laxisve vestita. *Ovarium* 1-loculare; ovulum basi erectum recurvum hippocrepidiforme v. fere annulatum. *Fructus* valde obliquus, 2 lin. diametro, pericarpio crustaceo v. calycis tubo separabili. *Semen* hippocrepidiforme, supra semiseptum recurvum.

Although previously figured by De Vriese, we have again represented this plant, in order to show the curious shape of the ovule and seed, which appears hitherto to have escaped observation, but which really characterizes the section *Camptospora*, consisting of five species, all from Western Australia.—G. Bentham.

Fig. 1. Flower. 2. Corolla, cut open. 3. Flower, with the corolla removed, showing the stamens and style. 4. Two stamens. 5. Ovary, vertical section. 6. The same, transverse section. 7. Fruit. 8. The same, vertical section, showing the seed.

Plate 1028.

CATOSPERMUM MUELLERI, *Benth.*

Goodenovieæ.

Catospermum, *Benth. gen. nov.*—*Calycis* tubus adnatus; lobi 5, liberi. *Corollæ* tubus supra usque ad ovarium fissus; limbi lobi 5, subæquales, demum digitatim patentes, marginibus breviter alatis. *Stamina* libera. *Ovarium* inferum, 2-loculare; ovula in loculis gemina, ab apice suspensa. *Indusium* cupulare, minute ciliatum, stigma breve includens. *Drupa* 10-costata, 4-sperma, 2-locularis, loculis imperfecte 2-locellatis.—Herba *glabra*. Folia *dentata*. Flores *flavi, in cymas axillares pedunculatas dispositi.*

C. Muelleri, *Benth. Fl. Austral.* iv. *ined.*—*Scævola goodeniacea*, F. Muell. Fragm. i. 121.

Hab. Gravelly banks of Victoria river, Hooker's and Sturt's Creeks, N. Australia, *F. Mueller.*

Herba glabra, perennis, caulibus procumbentibus v. ascendentibus, 1–1½-pedalibus. *Folia* petiolata, ovata v. obovata, irregulariter dentata, maxima absque petiolo pollicem excedentia. *Pedunculi* sæpius 3-flori, pedicellis longiusculis, lateralibus infra medium bracteolis minutis præditis. *Calycis* tubus 1½ lin. longus; lobi breves, lineari-lanceolati. *Corolla* semi-

pollicaris, extus glabra, intus leviter pubescens. *Stylus* glaber v. vix pilosulus. *Fructus* (a nobis non visus) 3–4 lin. longus.

F. Mueller, in describing this plant as a species of *Scævola*, observed that it might equally well be placed in *Goodenia*. As, however, it differs so remarkably from both, as well as from the whole Order, in the number and insertion of the ovules, I have felt obliged, in a general arrangement of *Goodenovieæ*, to propose it as a distinct genus. I have only seen the fruit in a very young state, but it is stated by F. Mueller to be a drupe as above described.—G. Bentham.

Fig. 1. Flower. 2. The same, with the calyx-lobes and corolla removed, showing the stamens and style. 3. A stamen. 4. Ovary, vertical section. 5. The same, transverse section.

Plate 1029.

DASYLEPIS RACEMOSA, *Oliv.*

Bixineæ, § Pangieæ.

D. racemosa, *Oliv. in Journ. Linn. Soc.* ix. 170.

Hab. Camaroons Mountain, 2–3000 ft., *Mr. Gustav Mann.* Flowering in December.

Arbor 20–30-pedalis, glaberrima. *Ramuli* teretes, læves, crassitie pennæ corvinæ. *Folia* alterna, subcoriacea, petiolata, oblongo-elliptica v. elliptica, breviter et obtusiuscule acuminata, basi late cuneata v. leviter rotundata, remote denticulata, utrinque glabra, nervo medio venisque primariis subtus prominentibus, venulis ultimis reticulatis subtransversis prominulis; 6–9 poll. longa, $2\frac{1}{2}$–$3\frac{1}{2}$ poll. lata. *Petioli* $\frac{1}{2}$–$\frac{3}{4}$ poll. longi. *Racemi* axillares, solitarii, folio breviores, $2\frac{1}{2}$–4 poll. longi, multiflori, glabri, bracteis minutis deltoideo-ovatis concavis. *Pedicelli* patentes, glabri, $\frac{1}{4}$–$\frac{1}{2}$ poll. longi. *Flores* diametro $\frac{1}{2}$–$\frac{3}{4}$ poll., hermaphroditi (v. polygami). *Sepala* orbicularia v. late elliptica, concava. *Petala* 4–6, sepalis vix longiora, ovata elliptica v. interiora angustiora et utrinque angustata, facie interiore infra medium squama incrassata hirsuta adnata instructa. *Filamenta* complanata, glabra. *Antheræ* filamento longiores v. æquilongæ, lineares vel lineari-lanceolatæ, obtusiusculæ, basi breviter cordato-sagittatæ, connectivo continuo latiusculo, loculis lateraliter dehiscentibus. *Ovarium* liberum, ovoideum, corrugato-sulcatum, in stylum indivisum attenuatum, uniloculare; placentæ 2–3–4, multiovulatæ; stigma minutum, 2–3–4-fidum. *Fructum* non vidi.—D. Oliver.

Fig. 1. Bud. 2. Flower expanded. 3. Same, in vertical section. 4. Petal, with adnate, hairy scale. 5. Stamen. 6. Pistil. 7. Transverse section of ovary.

Plate 1030.

LEPIDOSTEPHIUM DENTICULATUM, *Oliv.*

Compositæ, § Senecionideæ.

Lepidostephium, *Oliv. gen. nov.*—Capitulum multiflorum, heterogamum, floribus radii uniseriatis ligulatis fœmineis, disci tubulosis hermaphroditis. *Involucrum* hemisphæricum; squamæ multiseriatæ, imbricatæ, lineares v. subulatæ, inæquales, herbaceæ, intus glabræ, interiores longiores acuminatæ, margine anguste scariosæ. *Receptaculum* leviter convexum v. subplanum, epaleaceum, alveolatum, alveolis glanduloso-fimbrilliferis. *Corollæ radii* ligulatæ, ligula lineari-oblonga v. lineari-spathulata, apice 3-dentata; *disci* tubulosæ 5-dentatæ. *Antheræ* vix exsertæ, lineares, basi integræ, ecaudatæ, apice connectivo breviter quadrato-oblongo productæ. *Stylus* fl. fœminei breviter exsertus, fl. hermaphroditi corollam æquans, bifidus, segmentis linearibus; *stigmata* truncata, minutissime papillosa. *Achenium* subteres, glanduloso-hispidulum v. pilosulum. *Pappus* coroniformis, paleaceus, paleis uniseriatis 3–5-fidis, basi connatis v. subliberis.—Herba *biennis v. perennis, erecta, superne parce corymbosim ramosa.* Folia *alterna*, radicalia *oblongo-lanceolata utrinque attenuata, acuta, retrorsum denticulata, scabriuscula, subtus tomentosa;* caulina *angustiora, gradatim minora, longe decurrentia.* Capitula *pauca* (3–8), *pedunculata, laxe corymbosa, floribus radii (ex sicco) purpurascentibus.*

L. denticulatum, *Oliv. sp. unica.*

Hab. Collected on the Katberg, by P. M'Owan, Esq., of Grahamstown. Flowering in December and January.

Herba $1\frac{1}{4}$–$1\frac{3}{4}$-pedalis. *Caulis* simplex, plus minus tomentosa, glanduloso-scabrida v. sublævis. *Folia* alterna, remote denticulata, denticulis recurvis, pagina superiore setulis brevissimis curvulis scabrida, inferiore tomentosa nervo medio prominulo setuloso; *radicalia* oblongo-ovalia, acuta, in petiolum marginatum longe attenuata, cum petiolo 4–8 poll. longa, $\frac{3}{4}$–$1\frac{1}{3}$ poll. lata; *caulina* inferiora lineari-lanceolata, acuta, marginibus revolutis longe decurrentia, superiora breviora lineari-subulata. *Pedunculi* adscendentes, albo-tomentosi, bracteolis subulatis distantibus 1–5 instructi. *Involucrum* hemisphæricum, $\frac{1}{4}$–$\frac{1}{2}$ poll. diam., basi albo-tomentosum, squamis indefinitis laxiuscule imbricatis, exterioribus brevioribus herbaceis lineari-subulatis acutis tomentosis plus minus glanduloso-setulosis, interioribus longioribus linearibus infra apicem leviter dilatatis acuminatis margine anguste scarioso-fimbriatis v. setoso-ciliolatis, carina setulosa. *Flores radii* circiter 20, fauce filamentis brevibus anantheris 3–5 instructi, ligula patentim revoluta subtus glandulosa involucro fere duplo longiore. *Flores disci* tubulosi v. anguste infundibuliformi-tubulosi, involucro æquilongi.

This plant has much of the general aspect of a *Senecio* of the section

'*Rigidi*,' from which its involucre and pappus at once distinguish it.—D. Oliver.

Fig. 1. Ray-floret. 2. Style-branches of same. 3. Disk-floret. 4. Stamen. 5. Style-branches of disk-floret. 6. Achene. 7. Scales of pappus.

Plate 1031.

HEDYOTIS ARBOREA, *Roxb.*

Rubiaceæ, *Tribe* Hedyotideæ.

H. arborea, *Roxb.;* arbor parva, glaberrima, ramulis teretibus, foliis breviter petiolatis oblongo-lanceolatis acuminatis oblique penninerviis coriaceis lucidis apicibus recurvis, stipulis in vaginam tubulosam intra-petiolarem 2-dentatam connatis, floribus abortu unisexualibus in corymbos terminales multifloros dispositis, calycis dentibus obtusis, corolla rotata coriacea, lobis brevibus ovatis, stylo brevissimo, stigmatibus brevibus, capsula subglobosa, ad apicem late umbonatam rima transversa loculicide dehiscente, seminibus angulatis.—*Hedyotis? arborea*, Roxb. in Beatson's St. Helena Tracts, Appendix, 310; DC. Prodr. iv. 422.

Hab. St. Helena, wooded region abundant, *Roxburgh, Burchell, Gen*^{l}. *Walker, Seemann, J. D. Hooker.* Flowering in February.

This, the "Dogwood-tree" of St. Helena, is one of the few remaining common trees of the island. As a species it differs from almost all others of the large genus to which it belongs in the very short rotate corolla and unisexual flowers, the stamens very minute and quite sterile in the female flowers, and the style and stigmas equally reduced in the male. I find occasionally three stigmas in the male flowers, but have not met with more than two in the females.—J. D. Hooker.

Fig. 1. Male flower. 2. Female. 3. Vertical section of ditto. 4. Capsule. 5. Transverse section of ditto. 6. Seed. 7. Vertical section of ditto;—*all magnified.*

Plate 1032.

SIUM HELENIANUM, *Hook. f.*

Umbelliferæ, *Tribe* Ammineæ.

S. Helenianum, *Hook. f. n. sp.;* glaberrimum, caule frutescente elato basi simplici superne folioso ramoso, ramis teretibus, foliis pinnatisectis amplis, pinnis sub-5-jugis amplis oblongis acutis argute dentatis basi cordato-2-lobis 3–7-nerviis et tenuiter reticulatis, lobo accessorio inflexo auriculæformi grosse dentato ima basi adjecto, umbellis pedunculatis terminalibus et oppositifoliis, involucri foliolis 6–10 oblongis mucronatis indivisis, vittis semini

sectione transversa teretiusculo contiguis.—*Angelica bracteata*, Roxb. in Beatson's St. Helena Tracts, Appendix, 297; DC. Prodr. iv. 169.

Hab. St. Helena, *Roxburgh*. Back of Diana's Peak, alt. 2–2600 ft., *J. Melliss, Esq.*

Caulis 3–5-pedalis, 1 poll. diametro, viridis. *Folia* 2–3-pollicaria, læte viridia, foliolis 3 poll. longis 1–2 latis lucidis. *Umbellæ* 3 poll. diametro, radiis gracilibus, umbellulis $\frac{1}{4}$ poll. diametro. *Involucra* et involucella brevia. *Flores* albi. *Fructus* $\frac{1}{8}$ poll. longus.

For this most interesting plant I am indebted to my indefatigable friend Mr. Melliss, who informs me that the green stems, like pieces of Bamboo, are brought to the market of St. Helena for sale, and are eaten raw under the name of Jellico. It was originally discovered by Roxburgh early in this century, but does not exist in Burchell's previous collections, and has not been gathered by any subsequent collector except Mr. Melliss, who has sent to the Royal Gardens a dried specimen, living plants, seeds, and a bundle of the stems, as sold in the market. He informs me that it is abundant in ravines down each side of the central ridge from Diana's Peak, in rich damp soil amongst Tree-ferns and Cabbage-trees (arborescent *Compositæ*).

Sium Helenianum is another instance of the curious fact, that herbaceous plants are often represented by frutescent or arborescent allies in insular localities, of which amongst *Umbelliferæ* the plant figured in our next Plate is another instance, and the *Melanoselinum* and *Monizia* of Madeira (umbelliferous plants, both now referred to *Thapsia*) are others. *Hedyotis arborea* (Plate 1031), and the arborescent *Compositæ* of St. Helena, are other cases in point.

As a species, the present is closely allied to *S. Thunbergii*, DC., of South Africa, which has similarly acutely toothed and finely veined leaflets, and shows a disposition to have the principal nerves radiating from the insertion of the pinnule; its bracts are also similar, as is the structure of its fruit, but its leaflets are much smaller, not cordate at the base, nor bearing the curious inflexed auricle of *S. Helenianum*, and the stem is short and herbaceous, and root fibrous.—J. D. Hooker.

Fig. 1. Flower. 2. Petal. 3. Stamen. 4. Ovary, stylopods, and styles. 5. Fruits. 6. Transverse section of ditto:—*all magnified.*

Plate 1033.

LICHTENSTEINIA BURCHELLII, *Hook. f.*

Umbelliferæ, *Tribe* Ammineæ.

L. Burchellii, *Hook. f. n. sp.*; caule elato erecto suffruticoso nodoso superne folioso et ramoso, foliis pinnatisectis, petiolo foliaceo-stipulato, pinnis 8–10-jugis imbricatis sessilibus oblongis acuminatis argute dentatis, basi cordatis margine inferiore sublobato sub-3-nerviis tenuissime reticulatis, umbel-

lis numerosis densifloris, involucri foliolis 6–10 lanceolatis aciculari-acuminatis integris v. paucilobatis, petalis acutis non apiculatis.

Hab. St. Helena, Diana's Peak, *Burchell;* near Taylor's Flat, to the westward of Diana's Peak, in exposed places, rare, *J. Melliss, Esq.* Flowering in January.

Caulis rigidus, ramis flexuosis vage dichotome ramosis, ramulis striatis. *Folia* 1–1½ poll. longa, foliolis coriaceis 1½-2 poll. longis, ½–1 poll. latis. *Umbellæ* compositæ, 2–3 poll. diametro; umbellulæ ½ poll. diametro, radiis strictis rigidis. *Involucri* foliola ¼ poll. longa. *Flores* albi, gracile pedicellati. *Fructus* ⅙ poll. longus, jugis 5 prominulis 1-vittatis.

This fine species of the Cape genus *Lichtensteinia* was discovered by Burchell in 1807, who in a note states that it is commonly called "Angelica;" it hence would appear that he confounded it with the *Sium* (Plate 1032), of which there are no specimens in his herbarium. The similarity between these two plants is in many respects striking, their habit being apparently identical, the cutting of the broad sessile leaflets similar, as in their broad numerous involucral rays. *L. Burchellii* departs from the generic character in the petals wanting the inflexed terminal lacinia.—J. D. Hooker.

Fig. 1. Bud. 2. Open flower. 3. Petal. 4. Stamen. 5. Fruit. 6. Ditto. 7. Transverse section of ditto:—*all but Fig.* 6 *magnified.*

Plate 1034.

MESEMBRYANTHEMUM CRYPTANTHUM, *Hook. f.*

Ficoideæ.

M. (nodiflora) **cryptanthum,** *Hook. f. n. sp.;* annuum, papillosum, ramulis crassis tumidis, foliis crasse cylindricis obtusis, calycis tubo clavato lobis 5 orbiculatis concavis dorso tumidis v. breviter obtuse productis, petalis lineari-lanceolatis sepalis brevioribus, stigmatibus minutis.

Hab. St. Helena, Prosperous Bay plain, *Burchell,* 1807. Flowering in December and January. Sent also by J. Melliss, Esq.

Caulis inarticulatus, debilis, 8–12 poll. longus, crassitie digiti minoris, vage 2–3-chotome ramosus, ramulis clavatis, aquosus, intus cancellatus, flavescens. *Folia* 1–2 poll. longa, ½ poll. diametro, cylindrica, obtusa. *Flores* terminales et axillares, sessiles v. breviter et crasse pedunculati. *Calyx* clavatus, 1 poll. longus, limbo tumido, tubo subturbinato; lobi orbiculati, valde concavi, dorso interdum in cornu breve obtusum producti. *Petala* alba. *Stylus* basi conicus, stigmatibus et loculis ovarii ad 8. *Stamina* brevia, sub-3-seriata.

Closely allied to the polymorphous *M. nodiflorum*, Linn., of South and North Africa, but much larger in all its parts, with broad orbicular calyx-lobes that are not produced at the back, or into a short blunt horn only. Mr. Fitch's drawing is made from one of Dr. Burchell's, taken from the

living plant, and the dissections are made from his dried specimens.—J. D. Hooker.

Fig. 1. Flower. 2. Vertical section of ditto. 3. Petal. 4. Cells of ovary. 5. Seed and funicle:—*all magnified.*

Plate 1035.

PHARNACEUM ACIDUM, *Hook. f.*

Ficoideæ.

P. acidum, *Hook. f. n. sp.;* perenne, glaberrimum, glaucum, caule ramoso, foliis oppositis et subfasciculatis tenuiter cylindraceo-clavatis obtusis, inferioribus anguste spathulatis, stipulis integris, pedunculis elongatis, floribus umbellatis, sepalis valde inæqualibus exterioribus oblongis v. ovato-oblongis intimis orbiculatis membranaceis, disco inconspicuo, staminibus 12–20, stylis 5.

Hab. St. Helena, Sandy Bay, *Burchell, Capt. Haughton, J. Melliss, Esq.*

Caulis spithamæus et ultra, rigidus, angulatim flexuosus, ramosus. *Folia* 1½–2-pollicaria, molliter fragilia, aquosa, pallide glauca, virescentia. *Pedunculi* erecti, 3–5 poll. longi, bracteis parvis oblongis. *Pedicelli* graciles, pollicares. *Flores* ½ poll. diametro, albi.

Though differing from the generic character of *Pharnaceum* in the very unequal sepals and entire stipules, I cannot doubt but that this plant should be referred to that genus, and to the section *Hypertelis* (genus *Hypertelis*, of E. Meyer), in which the stamens are numerous, the disk more or less evident, and margins of the seed rounded. Mr. Melliss informs me that the plant is acid, and is said to be used as salad. Burchell calls it "Longwood Samphire from Sandy Bay," in his notes.—J. D. Hooker.

Fig. 1. Flower. 2. The same, laid open. 3. Stamen. 4. Ovary. 5. Transverse section of ditto:—*all magnified.*

Plate 1036.

KIRKIA ACUMINATA, *Oliv,*

Simarubeæ.

Kirkia, *Oliv. gen. nov.*—*Flores* hermaphroditi v. polygami. *Calyx* latiusculus, patelliformis, limbo brevi 4-partito, segmentis ovato-deltoideis. *Petala* 4, lobis calycinis alterna, eisdem multo longiora, oblongo-lanceolata, æstivatione marginibus involutis v. valvatim conduplicatis. *Stamina* 4, petalis alterna, eisdem subæquilonga, ad marginem disci inserta, filamentis filiformibus subulatisve inappendiculatis glabris, antheris ovato-oblongis ob-

tusis muticis bilocularibus longitudinaliter dehiscentibus, dorso prope basin filamento affixis. *Ovarium* sessile, liberum, parvulum, medio disci insidens, 4-lobum, glabrum, 4-loculare; styli 4, brevissimi, apice liberi; stigmata minuta. *Ovula* solitaria, minutissima (v. interdum geminata?), angulo centrali affixa. *Fructus* exsuccus, epicarpio tenui, endocarpio coriaceo-fibroso, oblongus, tetragonus, carpellis 4 monospermis utrinque emarginatis retusisve ab axi persistente secedentibus indehiscentibus demum ab apice carpophori quadrifidi pendulis. *Semina* exalbuminosa, testa papyracea; cotyledones carnosæ, complanatæ, lineari-oblongæ, basi emarginatæ, radicula brevi supera 4–6-plo longiores.—Arbor *mediocris, glabra.* Folia *alterna, imparipinnata, multifoliolata, ad apices ramulorum sæpius conferta, exstipulata.* Flores *cymosim paniculati, paniculis pedunculatis axillaribus multifloris.*

K. acuminata, *Oliv. Fl. Trop. Afr.* i. 311.

Hab. Zambesi, common from Batoka to the delta, *Dr. J. Kirk.* Flowering in December.

Ramuli teretes, crassiusculi, læves, glabri. *Folia* 13–19-foliolata, tenuiter coriacea, glabra. ½–1 ped. longa, foliolis lateralibus alternis v. sæpius per paria approximatis petiolulatis lanceolatis v. ovato-lanceolatis acuminatis basi inæqualibus semicordatis vel margine superiore rotundatis, serrulatis epunctatis. *Pedunculi* recti, rigidi, teretiusculi, glabri, 2–6 poll. longi, apicem versus subtrichotome divisi, pedunculis secundariis divergentibus adscendentibusque, pedicellis pilosulis glabratisve flore brevioribus v. æquilongis. *Calyx* lobis ovato-deltoideis obtusis v. obtusiusculis. *Petala* circiter 2 lin. longa, patentia, oblongo-lanceolata, conduplicata v. marginibus involuta, intus basi tuberculis minutissimis instructa. *Filamenta* subulato-filiformia, anthera fere duplo longiora. *Antheræ* lanceolato-ellipticæ v. ovato-oblongæ, muticæ. *Discus* crassiusculus, subcorrugatus, tetragonus, glaber. *Ovarium* minutum, 4-lobum, lobis sepalis alternis. *Fructus* 6–8 lin. longus, 3 lin. latus. *Cocci* maturitate facile secedentes, oblongi, triquetri, apice processus recurvato carpophori affixi.

I have allowed this plant to be printed off in the 'Tropical African Flora' under *Simarubeæ*, but I admit that its affinity with the more characteristic genera of this Order is not very marked, nor have I detected the bitterness so common amongst *Simarubeæ*. From the minuteness of the ovary in the specimens examined, I think the flowers may prove to be polygamous or subpolygamous, in which case an examination of more perfectly developed pistillate flowers may enable me to settle the affinity of the plant. It may prove a *Burseracea*. If in *Boswellia* the pyrenes were imbedded in the seceding valves of the pericarp, the structure of the fruit would be very similar to that of *Kirkia*.

The genus commemorates the important services rendered to botany by Dr. John Kirk, the accomplished naturalist of the Livingstone-Zambesi Expedition.—D. Oliver.

Fig. 1. Expanded flower. 2. Vertical section of flower, the petals and stamens removed. 3. Stamens. 4. Ovary, one cell laid open. 5. Fruit, nat. size. 6. Same enlarged, showing attachment of the cocci to the carpophore. 7. Embryo.

Plate 1037.

ARCEUTHOBIUM CRYPTOPODUM, *Eng.*

LORANTHACEÆ.

A. cryptopodum, *Engelm. in Plantæ Lindheim.* 215 (in note); "caule ramisque acute quadrangulatis robustis articulis brevioribus, squamis truncatis in vaginulas cupulatas connatis, floribus in spicas densas compositas congestis; femineis ovatis in quavis axillo singulis; baccis brevissime incluso-pedicellatis erectis."

HAB. Sante Fé, only on *Pinus brachyptera.* Orizaba, *Liebmann.*

Fig. 1. Branch-bud, much enlarged. 2. Vertical section of branch, showing the insertion of an axillary, much-compressed female flower. 3. Terminal female flower detached. 4. Vertical section of same, showing the analogy between the sheathing leaf-rudiments at the base of the flower, and the aduate perianth-segments. 5, 6, 7. Vertical section of female flower; 7 through the centre, 6 slightly, and 5 yet further removed from the axis. The paler area of 5 and 6 immediately over the dark cone, simply indicates the translucent portion of the pericarpial tissue, which ultimately becomes transformed into "viscine," as in *Viscum.* It is, of course, organically continuous outside with the exterior layer of the pericarp, inside with the darker-coloured, firm, central portion, presenting the conical outline in vertical section represented in Figs. 5 and 6. This central firmer tissue, when cut precisely through the axial line, is found to be continuous upwards through the viscine cells towards the almost sessile stigma. Fig. 6 shows, within this firmer central tissue, a minute cavity, which Fig. 7 shows to be occupied by a much compressed cellular body (seen edgewise in the fig.), presenting the appearance of a free, naked, erect ovule. Fig. 8, the same "cellular body" from a younger flower (much enlarged), here a papilliform conical process, apparently organically continuous at its base with the subjacent tissue. Fig. 9 (also much enlarged), the same at a more advanced stage (seen edgewise in Fig. 7). Near the rounded apex of the 'cellular body' is a minute enclosed sac, isolated in Fig. 10. This latter is bounded by a free but well-defined membranous wall, and is full of more or less distinctly defined cells.

From the material at disposal, I cannot at present satisfactorily explain the nature of the ovuliform body (Figs. 8 and 9). It may be a fertilized embryo-sac, the lower portion of which is so engaged in its early stage in the subjacent cellular tissue, as to appear to be in continuous organic connection with it. In this case, Fig. 10 must represent an early condition of development of the embryo in the embryo-vesicle, although its occurrence thus as a minute spherical sac, without trace of suspensor, near the apex of an embryo-sac already filled with cellular tissue, appears to be at variance with the usual mode of its formation in *Loranthaceæ* (compare Hofmeister in Ann. Sc. Nat. Ser. 4. xii. t. 1, 2). On the other hand, Figs. 8 and 9, at first sight, look much like a naked, free ovule, and the vesicle, Fig. 10, an embryo-sac filled with cellular tissue. Against this apparently reasonable view is the circumstance that at the stage represented by Fig. 9, or rather later, the entire body exhibits a tendency to separate on pressure by a clear line at the base from the tissue beneath. We have not, moreover, any case, that I am aware of, in *Loranthaceæ*, in which the ovule is wholly free.

I recommend the case to those botanists who may happen to have access to a sufficient series of specimens in different stages of development.—D. OLIVER.

Plate 1038.

BRACHYLOMA ERICOIDES, *Sond.*

EPACRIDEÆ.

B. ericoides, *Sond. in Linnæa*, xxvi. 247; foliis linearibus mucronatis concoloribus, floribus subsessilibus pluribracteatis, corollæ lobis obtusis medio barbatis.—*Lobopogon ericoides*, Schlecht. Linnæa, xx. 620. *Stenanthera ericoides*, F. Muell. Fragm. Phyt. Austral. iv. 98. *Styphelia lobopogona*, F. Muell. l. c. vi. 39.

HAB. Dry desert country, South Australia and N.W. districts of Victoria, *F. Mueller and others.*

Frutex humilis, dumosus v. diffusus, ramulis puberulis. *Folia* conferta, erecta v. patentia, linearia v. oblongo-linearia, mucronato-acuta, minute denticulato-ciliata, plana v. leviter concava, pleraque 3–4 lin. longa. *Flores* in axillis solitarii, subsessiles, folia vix superantes. *Bracteæ* paucæ, parvæ; bracteolæ calycis dimidium æquantes. *Sepala* ad 2 lin. longa, obtusissima, subscariosa. *Corolla* 3 lin. longa, tubo calycem subæquante, intus ad fauces squamis 5 reflexis longe piloso-fimbriatis corollæ lobis oppositis aucto; lobi tubo breviores, ovati, obtusi, medio barbati, æstivatione insigniter imbricati. *Antheræ* ad fauces subsessiles, filamentis brevissimis latis crassiusculis. *Discus* hypogynus, truncatus, annularis. *Ovarium* pubescens, 5-loculare; stylus longiusculus. *Fructus* calycem æquans, globosus, 5-costatus, durus, 5-locularis, 5-spermus.

The genus *Brachyloma*, of Sonder, independently but at a later period established also by Schlechtendal under the name of *Lobopogon*, comprises half-a-dozen species, allied to *Lissanthe* and *Leucopogon*, but differing from both, as well as from all other genera of the tribe *Styphelieæ*, by the lobes of the corolla more or less distinctly overlapping each other in the bud. The reflexed scales or tufts of hairs in the throat of the corolla are also present in all the species of *Brachyloma*, and in very few only of other genera.—G. BENTHAM.

Figs. 1 and 2. Leaves. 3. Flower. 4. The same cut open, showing the scales rather too low down. 5. Stamens, back view. 6. The same, front view. 7. Pistil and hypogynous disk. 8. Ovary, vertical section. 9. The same, transverse section. 10. Fruit. 11. The same, transverse section.

Plate 1039.

ADINANDRA MANNII, *Oliv.*

TERNSTRŒMIACEÆ.

A. Mannii, *Oliv. Fl. Trop. Afr.* i. 170; glabra, foliis coriaceis oblongo-lanceolatis v. ovalibus acuminatis, floribus axillaribus solitariis pedun-

culatis nutantibus, sepalis valde inæqualibus, petalis lineari-oblongis obtusis sepalis 2–3-plo longioribus, circa stylum gracilem elongatum laxe convolutim imbricatis, staminibus indefinitis 1-seriatis glabris basi petalorum brevissime adnatis.

Hab. Summit of the peak of the Island of St. Thomas, Gulf of Guinea, *Mr. Gustav Mann.*

Arbor 30-pedalis; rami glabri, teretes, punctato-tuberculati. *Folia* alterna, brevissime petiolata, subcoriacea, sæpius ovali- vel oblanceolato-oblonga, apicem versus glanduloso-serrulata, glabra, venulis obscuris, vernatione convoluta, $2\frac{1}{2}$–$3\frac{1}{2}$ poll. longa, $\frac{3}{4}$–$1\frac{1}{4}$ poll. lata, petiolo tuberculato 1 lin. longo. *Stipulæ* minutæ, subulatæ, deciduæ. *Pedunculi* solitarii, $\frac{1}{2}$–$\frac{3}{4}$ poll. longi, infra apicem per anthesin plus minus recurvi. *Bracteæ* 2, inæquales, ovatæ, coriaceæ, glabræ, sepala exteriora simulantes. Sepala coriacea v. marginibus scariosis glabra, exteriora minora late ovata acuta, interiora oblongo-ovata apice interdum leviter recurva. *Petala* obtusa, apice eroso-denticulata, $1\frac{1}{2}$–$1\frac{3}{4}$ poll. longa. *Stamina* circ. 25–30, inter se libera, basi brevissime petalis adnata; filamenta subulata, glabra; antheræ lineares v. lineari-lanceolatæ, filamentis paulo breviores v. eisdem æquilongæ, basi emarginatæ, apice connectivo truncato v. emarginato breviter productæ, 2-loculares, loculis rima laterali longitudinaliter dehiscentibus. *Ovarium* liberum, anguste ovoideo-conicum, glabrum, in stylo gracili elongato gradatim attenuatum, 4-loculare v. placentis prominentibus bifidis recurvis interdum axi subsecedentibus. *Ovula* indefinita, campylotropa, compressa, breviter funiculata. *Fructum* non vidi.

Differing from the only Asiatic species of *Adinandra* which I have examined in the glabrous, uniseriate stamens distinct *inter se*.—D. Oliver.

Fig. 1. Calyx and pistil. 2. Transverse section of ovary. 3. Corolla. 4. Same, with petals laid open exposing the stamens. 5. Stamen.

Plate 1040.

XANTHOSTEMON CHRYSANTHUS, *F. Muell.*

Myrtaceæ.

X. chrysanthus, *F. Muell. in Benth. Fl. Austral.* iii. 268; foliis ellipticis lanceolatisve acuminatis acutisve, staminibus uniseriatis elongatis, placentis peltatis truncatis, capsula calyce semiinclusa.

Hab. Along streams, Rockingham Bay, Queensland, *Dallachy*.

Arbor excelsa; specimina florifera undique glabra. *Folia* lanceolata v. elliptica, acuminata v. subacuta, in petiolum brevem angustata, pennivenia, 4–6 poll. longa. *Pedunculi* in axillis supremis semipollicares, singuli flores 5–10 dense cymosas ferentes. *Bracteæ* parvæ. *Pedicelli* breves, crassiusculi. *Calycis* tubus late campanulatus, ima basi tantum ovario adnatus, ad 3 lin. diametro; lobi lati, tubo breviores. *Petala* suborbiculata, calycis lobis

duplo longiora. *Stamina* 20–25, pulchre aurea, uniseriata, parum inæquilonga, longiora subpollicaria, filamentis crassiusculis; antheræ oblongæ, versatiles. Ovarium semisuperum, vulgo 3-loculare; placentæ late peltatæ, truncatæ, ovulis circa marginem in serie simplici annulatis reflexis. *Stylus* elongatus, stigmate parvo. *Capsula* subglobosa, lata basi affixa, ceterum libera, calyce parum aucto ad medium inclusa, loculicide 3-valvis. *Semina* perfecta pauca, plana, testa tenui; cotyledones latæ, conduplicatæ, radiculam incurvam plus minus includentes; semina abortiva perfectis subconformia, intus homogenea indurata.

For observations on the genera figured in this and the three following Plates, see notes on *Myrtaceæ* in Journ. Linn. Soc. x.—G. Bentham.

Fig. 1. Petal. 2. Calyx and style, with the petals removed and the stamens cut short, showing their insertion. 3. Ovary. 4. The same, vertical section. 5. The same, transverse section. 6. Placenta. 7. Capsule.

Plate 1041.

OSBORNIA OCTODONTA, *F. Muell.*

Myrtaceæ.

O. octodonta, *F. Muell. Fragm. Phyt. Austral.* iii. 31; *Benth. Fl. Austral.* iii. 271.

Hab. Tropical Australia; Islands of the Gulf of Carpentaria, *R. Brown;* Port Essington, *Armstrong;* Trinity Bay, *Henne.*

Frutex erectus, ramosissimus, floribus exceptis glaber. *Folia* obovato-oblonga v. cuneata, obtusissima v. subretusa, in petiolum brevem contracta, coriacea, pennivenia, $\frac{3}{4}$–$1\frac{1}{4}$ poll. longa. *Flores* sessiles, in axillis solitarii v. ad apices ramorum inter folia ultima terni, bracteolis 2 tomentosis deciduis stipati. *Calyx* tomento brevi canescens, tubo adnato angusto, 2–$2\frac{1}{2}$ lin. longo; lobi 8, tubo breviores, ovati, obtusi. *Petala* 0. *Stamina* ∞, 2–3-seriata, calyce paullo longiora; antheræ ovatæ, versatiles. *Ovarium* inferum, basi septo brevissimo divisum, ceterum uniloculare; ovula plurima, adscendentia. *Fructus* calycis lobis coronatus, ut videtur indehiscens, exsuccus. *Semina* 1–2, obovoidea, testa tenui; embryo rectus, cotyledonibus crassis planiusculis v. hemisphæricis, radicula longioribus.—G. Bentham.

Fig. 1. Flower (the stamens represented rather too long). 2. Calyx and pistil. 3. Stamens, front and back view. 4. Ovary, vertical section. 5. The same, transverse section.

Plate 1042.

LYSICARPUS TERNIFOLIUS, *F. Muell.*

Myrtaceæ.

L. ternifolius, *F. Muell. in Trans. Phil. Inst. Vict.* ii. 68; *Benth. Fl. Austral.* iii. 267.

Hab. Queensland; on the Maranoa, *Mitchell;* Darling Downs and between the Mackenzie and Dawson rivers, *F. Mueller.*

Arbor ad altitudinem 30 ped. assurgens, cortice molli fibroso, ramulis novellis inflorescentiaque molliter tomentoso-pubescentibus. *Folia* opposita v. ternatim verticillata, anguste linearia, mucronato-acuta v. rarius obtusa, marginibus arcte revolutis, supra nitentia, subtus cano-pubescentia v. demum glabrata, 1½–3 poll. longa. *Flores* polygami, masculi in cymas terminales irregulares dispositi, hermaphroditi sæpius sub apicibus ramorum pedicellis unifloris oppositi v. ternatim verticillati. *Bracteæ* minutæ. *Calyx* molliter tomentosus, tubo campanulato in floribus hermaphroditis basi breviter adnato, 1½ lin. longo; lobi 5, parvi. *Petala* suborbiculata, pubescentia v. ciliata, linea paullo latiora. *Stamina* petalis longiora, 2–3-seriata, exteriora longiora antheris reniformibus canis, interiora antheris bilocularibus perfectis. *Ovarium* in fundo calycis lata basi affixum, inclusum, villosum, 3-loculare; ovula in quoque loculo plurima, placenta basali erecta; stylus brevis, stigmate subpeltato. *Capsula* oblonga, calyce duplo saltem longior, loculicide 3-valvis. *Semina* . . .—G. Bentham.

Fig. 1. Leaf. 2. The same, cut across, showing the thick revolute margins. 3. Flower-bud. 4. Expanded flower. 5. Vertical section of the calyx, showing the pistil and stamens. 6. Outer sterile stamens. 7. Perfect stamens. 8. Ovary. 9. The same, transverse section. 10. The same, vertical section. 11. Capsule.

Plate 1043.

RHODOMYRTUS MACROCARPA, *Benth.*

Myrtaceæ.

R. macrocarpa, *Benth. Fl. Austral.* iii. 273; foliis ovali-ellipticis obovatisve penniveniis, pedunculis 1–5-floris, ovulis 2-seriatis, fructu elongato cylindraceo, seminibus 1–2-seriatis.

Hab. Tropical Australia, Albany Island, *W. Hill;* Rockingham Bay, *Dallachy.*

Frutex elatus, ramulis novellis inflorescentiaque tomento appresso canescentibus. *Folia* petiolata, ovali-elliptica v. obovata, pennivenia et reti-

culato-venulosa, glabra v. subtus minute pubescentia, 4–6 poll. v. maxima usque ad 10 poll. longa. *Pedunculi* in axillis superioribus breves, sæpius 3-flori, rarius 1- v. 5-flori. *Calycis* tubus adnatus, breviter cylindricus; lobi 5, lati, inæquales. *Petala* diu in globum conniventia, rarius patentia, orbicularia. *Stamina* pluriseriata, petala haud superantia. *Ovarium* inferum, ad carpellum unicum reductum, ovulis 2-seriatim superpositis seriebus septo spurio (placenta intromissa) verticaliter distinctis, septisque spuriis horizontalibus ovula singula separantibus; stylus brevis, stigmate peltato. *Fructus* carnosus, indehiscens, sæpius cylindraceus, siccitate subtorulosus, $\frac{3}{4}$–$1\frac{1}{4}$ poll. longus, seminibus simplici serie suprapositis, rarius latior seminibus 2-seriatis. *Semina* crassa, compressa, horizontalia, testa duriuscula. *Embryo* curvatus, radicula crassa carnosa, cotyledonibus brevissimis involutis.—G. Bentham.

Fig. 1. Flower. 2. Stamen. 3. Calyx and pistil. 4. Ovary, vertical section. 5. The same, horizontal section. 6. Portion of the fruit. 7. Seed. 8. The same, horizontal section. 9. Embryo. 10. The same, horizontal section.

Plate 1044.

LEITNERIA FLORIDANA, *Chapm.*

Myricaceæ?

L. floridana, *Chapman, Flora of Southern United States,* 427.

Hab. Florida, Apalachicola, in salt-marshes.

Frutex 2–6-pedalis. *Ramuli* crassiusculi, teretes, innovationes piloso-pubescentes, deinde glabri, læves v. lenticellati. *Folia* decidua, membranacea, alterna, eglandulosa, longiuscule petiolata, ovalia v. oblongo-elliptica, obtusa v. obtusiuscula, basi angustata, integra, pennivenia, supra sublucida, costa nervisque secundariis sparse pubescentia, deinde glabrescentia, subtus pallidiora in costa latiuscula nervisque præcipue pubescentia, rete venoso haud prominulo, 3–6 poll. longa, $1\frac{1}{2}$–2 poll. lata. *Petiola* 1–$1\frac{1}{2}$ poll. longa, pilosula. *Stipulæ* nullæ. *Flores* dioici, achlamydei, amentacei; amenta præcocia in axillis foliorum delapsorum subsessilia. *Fl.* ♂: *amenta* laxiuscula, cylindracea, 1–$1\frac{1}{2}$ poll. longa; squamæ submembranaceæ, ovato-lanceolatæ, acutæ v. acuminatæ, extus laxe sericeo-pilosæ, intus glabræ. *Stamina* 8–10, libera v. filamentis basi ad squamam breviter adnatis; filamenta subulata, nuda; antheræ oblongo-ellipticæ, muticæ, biloculares, longitudinaliter dehiscentes, basi affixæ. *Fl.* ♀: *amenta* brevia, $\frac{1}{3}$–$\frac{1}{2}$ poll. longa; squamæ inferiores vacuæ, late ovatæ, obtusæ, imbricatæ, superiores floriferæ sericeo-pilosæ. *Ovarium* sursum laxe pilosum squamam subæquans, basi squamulis minutis 2–4 inæqualibus sæpius fimbriatim glanduligeris circumdatum, 1-loculare, 1-ovulatum. *Stylus* crassiusculus, ovario 2–3-plo longior, falcato-incurvus, unilateraliter canaliculatus et stigmatosus, glaber, deciduus. *Ovulum* lateraliter affixum, micropyle supera. *Fructus* drupaceus, exsuccus, ovali-oblongus, $\frac{3}{4}$ poll. longus, epicarpio tenui, endocarpio crustaceo. *Semen* ovale, compressum, albuminosum; testa papy-

racea; albumen tenui. *Embryo* cotyledonibus oblongis planiusculis basi emarginatis, radicula supera ovoidea exserta.

Referred by Dr. Chapman and, following him, by M. Casimir De Candolle, to *Myricaceæ*. The attachment of the ovule and the presence of a thin layer of albumen, lead me to doubt if its true affinity be with this group, though I am not able to suggest a better place for it at present. Dr. Chapman describes the seeds as exalbuminous. The albumen is very thin and easily overlooked, but I think there can be no mistake as to its presence. The upper squamæ of the male catkins occasionally subtend an ovary. We have specimens of perhaps a second species of *Leitneria*, from Texas, collected by Drummond.—D. Oliver.

Fig. 1 and 2. Scale of male catkin, with stamens, back and front. 3. Stamen. 4 and 5. Pistil and subtending scale. 6. Squamules at base of ovary. 7. Vertical section of ovary. 8. Enlarged ovaries after the fall of the styles. 9. Embryo.

Plate 1045.

MELANODENDRON INTEGRIFOLIUM, *DC.*

Compositæ, *Tribe* Asteroideæ.

M. integrifolium, *DC. Prod.* v. 279.

Hab. St. Helena; wooded region of Diana's Peak, alt. 2–3000 ft., *Burchell*, etc. Flowering in January and February.

Arbor 20–30-pedalis, tortuosa, ramulis crassis apice foliosis, crassitie pollicis, apicibus sericeo-villosis. *Folia* alterna, 6–8 poll. longa, $1\frac{1}{2}$–2 poll. lata, coriacea, obovato-lanceolata, in petiolum latum brevem semi-amplexicaulem angustata, obtusa, marginibus recurvis, supra glabra, subtus juniora præsertim subvillosa, pilis deciduis. *Capitula* numerosa, $\frac{3}{4}$ poll. diam., in corymbos axillares pedunculatos disposita, pedunculis pedicellisque bracteatis, bracteis linearibus. *Involucrum* hemisphæricum, squamis multiseriatis appressis siccitate recurvis lanceolatis acuminatis obscure ciliolatis rigidiusculis. *Receptaculum* planum, alveolatum. *Flores radii* ♀, sub-2–3-seriales, ligulati; ligula alba, apice 3-dentata. *Pappus* rufo-brunneus, brevis, parcus, 1-serialis, setis inæqualibus scabridis. *Styli* rami recurvi, lineares, obtusi. *Fl. disci* numerosi, ☿, tubulosi, 5-dentati. *Pappus* ut in ♀. *Antheræ* ecaudatæ. *Styli* rami cono terminati. *Achenium* parvum, pilosulum, oblongum, obtuse 4-gonum. *Embryo* obovoideus, cotyledonibus plano-convexis. —*Solidago integrifolia,* Roxb. in Beatson's St. Helena Tracts, Appendix, p. 323.

A remarkable plant, differing from *Erigeron* in habit and achenium only, as well observed by De Candolle. I know of no African plant to which it is at all closely allied, there being no species of *Erigeron* in Harvey and Sonder's 'Cape Flora,' and *Aster* and *Diplopappus*, which are both large Cape

genera, differ in the pappus and uniseriate ray-flowers. It is the "Black Cabbage-tree" of Roxburgh's, and "Bastard Cabbage-tree" of Burchell's Catalogue.—J. D. Hooker.

Fig. 1. Ray-flower. 2. Its style-arms. 3. Disk-flower. 4. Arms of style. 5. Pappus-hair:—*all magnified.*

Plate 1046.

HECTORELLA CÆSPITOSA, *Hook. f.*

Portulaceæ.

H. cæspitosa, *Hook. f. in Handbook of New Zealand Flora*, 27.

Hab. New Zealand; dry places in the Lake district of the Otago province, alt. 6000 ft., *Dr. Hector and Mr. Buchanan.* Flowering January to April.

Herba glaberrima, densissime cæspitosa, cæspitibus convexis 6–10 poll. latis. *Caules* 1–1½ poll. alti, breves, ramosi, crassitie digiti minoris. *Folia* numerosissima, ⅙ poll. longa, densissime imbricata, patula, coriacea, late triangulari-ovata, infra medium membranacea, basi dilatata, marginibus integerrimis et carina incrassatis, venis reticulatis. *Flores* parvi, albi, versus apices ramulorum sessiles. *Sepala* 2, parva, concava, truncata. *Petala* 5, basi connata, truncata, venosa. *Stamina* 5, tubo brevi corollæ inserta, filamentis filiformibus petalis æquilongis; antheræ lineari-oblongæ. *Ovarium* ovoideum, membranaceum, venosum, in stylum brevem attenuatum, stigmatibus 1–3 linearibus intus papillosis; ovula 4–5, e basi loculi erecta, funiculis gracilibus.

A very curious little plant, having no known near ally, though such may yet be found amongst the Antarctic Islands or Alps of the Southern Continent. It is named in honour of Dr. Hector, F.R.S., Director of the Geological Survey of New Zealand, to whom and to Dr. Haast we owe the discovery of so many alpine New Zealand plants.—J. D. Hooker.

Fig. 1 and 2. Leaves. 3. Flower. 4. Petal and stamens. 5 and 6. Ovaries. 7. Vertical section of ovary. 8. Ovule:—*all magnified.*

Plate 1047.

PYGMÆA CILIOLATA, *Hook. f.*

Scrophularineæ.

P. ciliolata, *Hook. f. Handbook of New Zealand Flora*, 217.

Hab. New Zealand; Canterbury and Marlborough provinces, Discovery Peaks, alt. 5500 ft., *Mr. Travers;* Hopkins river, *Dr. Haast.*

Herba densissime cæspitosa, pilis albis ciliolata. *Folia* late ovato-oblonga.

obtusa, utrinque glaberrima, marginibus pilis curvis rigidis ciliatis. *Corolla* 5–6-loba, lobis oblongis rotundatisve. *Stamina* inclusa v. exserta, filamentis brevibus v. elongatis. *Ovarium* glaberrimum.

This genus was established, in the 'Handbook of the New Zealand Flora,' on two curious little plants, natives of the Southern Alps; it is closely allied to *Veronica*, differing in the leaves not being obviously quadrifariously arranged, though strictly opposite, and in the 5–6-lobed corolla; the lobes of the latter are, however, unequal, and one is evidently larger than the rest. In both species the filaments vary in length.

Fig. 1. Leaf. 2. Flower. 3. Corolla, laid open. 4. Ovary. 5. Transverse section of ditto:—*magnified.*

P. pulvinaris, *Hook. f. l. c.*

Hab. New Zealand; Middle Island, summit of Mount Torlesse, forming hoary matted patches, *Dr. Haast.* Flowering in January.

Herba densissime cæspitosa, pilis albis subcrinita. *Folia* lineari-oblonga, dorso et marginibus albis, pilis laxis subflexuosis. *Corolla* 5-loba, lobis obovato-rotundatis. *Stamina* inclusa, rarius exserta. *Ovarium* apice pilosum.

Clearly allied to *P. ciliolata*, but with longer leaves, that are furnished with longer and laxer hairs, that give the whole plant a hoary appearance. The ovary also is pilose.

Fig. 1. Leaf. 2. Pair of ditto and branch. 3. Flower. 4. Corolla, laid open. 5. Ovary and style. 6. Fruit. 7. The same, cut transversely:—*all magnified.*

Plate 1048.

SILVIANTHUS BRACTEATUS, *Hook. f.*

Rubiaceæ, *Tribe* Hedyotideæ?

Silvianthus, *Hook. f. gen. nov.*—*Calycis* tubus obconicus; lobi 5, rarius 4, lineari-oblongi, obtusi, subæquales, post anthesin accrescentes. *Corolla* infundibuliformis, tubo et fauce ampliato intus pubescentibus; limbus parvus, 5-fidus, lobis brevibus rotundatis intus papillosis valvatis. *Stamina* 2, tubo corollæ inclusa, filamentis brevibus; antheræ dorso affixæ, lineari-oblongæ. *Discus* magnus, conicus. *Ovarium* 2-loculare; stylus gracilis, stigmate punctiformi; ovula numerosa, placentis septo affixis inserta. *Fructus* subcarnosus, inter lobos calycis in valvas 5 ad basin dehiscens, semina numerosa nudans. *Semina* majuscula, ovoideo-oblonga, subcurva, testa cellulosa, albumine copioso; embryo minutus, ovoideus.—Frutex *glaberrimus, ramosus, ramis teretibus.* Folia *opposita, petiolata, oblonga v. oblongo-lanceolata, acuminata, basi sæpe inæqualia, obtuse sinuato-dentata.* Stipulæ 0. Flores *albi, inter congeneres majusculi, in cymas breviter pedunculatas axillares densifloras dispositi, bracteati, bracteis oblongis obtusis.*

S. bracteatus, *Hook. f.*—*Psychotriæ sp.*, Wall. Cat. n. 8367.—*Neurocalyx (?) sp.*, Hook. f. et Thoms. Herb. Ind. Or.

Hab. Eastern Bengal; Silhet, *De Silva, Griffith.* Khasia Mts., alt. 1200 ft., *Lobb.* Luckipore in Cachar, *J. D. Hooker et T. Thomson.*

This, one of the most aberrant of *Rubiaceæ*, and though probably referable to the great tribe of *Hedyotideæ*, is closely allied to no other plant of the Order, except perhaps *Carlemannia*, with which it agrees in its most anomalous characters of a diandrous flower, absence of stipules, and dentate leaves. It differs from that genus in the valvate corolla-lobes, and from other *Hedyotideæ* in the fusiform stigma, and fleshy capsule 5-valved to the base. It is named in honour of M. De Silva, one of Dr. Wallich's most acute and indefatigable collectors, who was the first explorer of the Khasia and Silhet jungles. —J. D. Hooker.

Fig. 1. Flower. 2. Corolla-tube, laid open, and stamens. 3. Ovary, disk, style, and stigma. 4. Vertical section of ovary and disk. 5. Transverse section of ovary. 6. Ripe fruit. 7. The same, dehisced. 8. Seed. 9. Longitudinal section of ditto. 10. Embryo: —*all but 6 and 7 magnified.*

Plate 1049.

POLYURA GEMINATA, *Hook. f.*

Rubiaceæ, *Tribe* Hedyotideæ.

Polyura, *Hook. f. gen. nov.*—*Calycis* tubus turbinatus; lobi 5, ovati, persistentes. *Corolla* tubuloso-infundibuliformis, tubo brevi intus glabro, fauce villoso; lobi 5, ovati, obtusi, suberecti, valvati. *Stamina* 5, medio tubo corollæ inserta, filamentis breviusculis subulatis; antheræ lineari-oblongæ, semi-inclusæ. *Discus* pulvinaris. *Ovarium* 2-loculare; stylus gracilis, puberulus, stigmatibus 2 brevibus oblongis obtusis; ovula numerosa, placentis septo medio affixis inserta. *Capsula* parva, subglobosa, submembranacea, 2-locularis, septicide 2-valvis, septo membranaceo polyspermo. *Semina* obtuse angulata, testa crustacea granulata, albumine carnoso; embryo clavatus.—Herba *habitu* Ophiorrhizæ, *caule simpliciusculo basi decumbente radicante, foliis subtus et inflorescentia puberulis.* Folia *opposita et spurie verticillata, petiolata, ovata v. oblonga, acuta, penninervia, siccitate rubescentia.* Stipulæ *utrinque solitariæ, subulatæ.* Pedunculi *terminales, stricti, elongati, cymas breves scorpioideas alternatim gerentes.* Flores *in cymis dense 2-seriatim conferti, secundi, subsessiles, bracteis imbricatis occlusi, albi, bracteis siccitate rufescentibus.*

P. geminata, *Hook. f.—Ophiorhiza? geminata,* Wall. Cat. n. 6237; Hook. f. et Thoms. Herb. Ind. Or.

Hab. Assam, Gualpara, *Hb. Hamilton.* Silhet, *W. Gomez.* Khasia, *Lobb.* Nowgong, *Simmons.* Mishmi, *Griffith.* Nunklow, alt. 2–4000 ft., *J. D. Hooker et T. Thomson.*

The habit of this plant is that of *Ophiorrhiza*, from which its valvate corolla and curious inflorescence at once distinguish it; by the latter character alone can it be technically removed from *Hedyotis*, no species of which large genus has, however, the curious spiked scorpioid cymes of this, whilst

few have its 5-merous flowers. The whole plant assumes a fine vinous-red colour in drying, which it has retained for forty years in the herbarium.—J. D. Hooker.

Fig. 1. Flower. 2. Section of corolla. 3. Stamen. 4. Ovary, disk, style, and stigma. 5. Transverse section of fruit. 6. Ripe fruit. 7. Vertical section of ditto. 8. Seed:—*all magnified.*

Plate 1050.

LIMNOSIPANEA SPRUCEANA, *Hook. f.*

Rubiaceæ, *Tribe* Rondeletieæ.

Limnosipanea, *Hook. f. gen. nov.*—*Calycis* tubus ovoideus, hispidus; lobi 5, lanceolati, subfoliacei, intus basi glandulosi, persistentes. *Corolla* hypocraterimorpha, tubo gracili intus glabro, fauce glabro tenuiter pubescenti v. villoso; lobi 5, patentes, membranacei, oblongi, obtusi, contorti. *Stamina* 5, fauce corollæ inserta, filamentis filiformibus; antheræ oblongæ, exsertæ, dorso affixæ. *Discus* conicus. *Ovarium* 2-loculare; stylus filiformis, stigmatibus recurvis intus papillosis; ovula numerosa, placentis septo medio affixis inserta. *Capsula* ovoidea, crustacea, 2-locularis, loculicide 2-valvis, polysperma. *Semina* minuta, angulata, testa reticulata, albumine carnoso.—Herbæ *uliginosæ, Americæ tropicæ incolæ, graciles, erectæ, caule terete, basi simplice, superne* 2–3*-chotome ramoso.* Folia 3–∞*-natim verticillata, superiora rarius omnia opposita, oblonga v. linearia.* Stipulæ *obsoletæ.* Flores *parvi, in fasciculos bracteatos terminales et in dichotomiis ramorum sitos dispositi, rosei,* 2*-bracteolati.*

L. Spruceana, *Hook. f.;* caule e basi decumbente erecto gracili, foliis demersis ∞-natim verticillatis anguste linearibus acuminatis, emersis 3–6-natim verticillatis multo brevioribus ovatis ovato-lanceolatisve acuminatis pedunculis floriferis erecto-patentibus elongatis gracilibus, corollæ roseæ fauce pubescente.—*Sipania limnophila,* Spruce, n. 1027.

Hab. Amazon river, marshy and sandy places near Para, *Spruce* (1851).

Fig. 1. Flower. 2. Corolla, laid open. 3. Stamens. 4. Ovary and 2 calyx-lobes. 5. Transverse section of ovary:—*all magnified.*

This curious genus differs from *Sipania* in its remarkable habit, obsolete stipules, and exserted stamens. The other species known to me are:—

L. Schomburgkii, *Hook. f.;* caule simplici foliisque paucis oppositis lineari-oblongis obtusis sparse hispido-pilosis, floribus paucis, calycis lobis lineari-elongatis.

Hab. British Guiana; Rovuma river, *Schomburgk,* 464 (744).

L. palustris, *Hook. f.*—*Sipania palustris,* Seem. Bot. Herald, Voy. 136.

Hab. Panama, *Seemann;* New Granada, Santa Martha, *Goudot.*

PLATE 1051.

PHYLICA RAMOSISSIMA, *DC.*

RHAMNEÆ.

P. ramosissima, *DC. Prod.* ii. 34.—*P. rosmarinifolia*, Roxb. in Beatson's St. Helena Tracts, 316, non Thunb. non Lamk.

HAB. St. Helena, Diana's Peak, Longwood, etc. "Wild Rosemary" of the colonists.

Frutex 10-pedalis, ramosissimus, ramis gracilibus fastigiatis teretibus, ultimis foliis subtus et inflorescentia niveo-tomentosis. *Folia* alterna, lanceolata v. oblongo-lanceolata, acuminata, basi in petiolum angustata, $\frac{1}{3}$–$1\frac{1}{2}$ poll. longa, coriacea, marginibus integerrimis tenuiter revolutis, supra glaberrimis nitidis, subtus niveis. *Flores* sessiles, breviter pedicellati, $\frac{1}{8}$ poll. longi, extus niveo-villosi. *Calycis* tubus obconicus; lobi 5, triangulares, patentes. *Petala* orbicularia, concava, breviter unguiculata. *Stamina* petalis occlusa, filamentis subulatis; antheræ orbiculares, rimis demum confluentibus late hiantes. *Discus* tumidus, explanatus. *Stigma* 3-fidum. *Fructus* ovoideus, apice areolatus, $\frac{1}{4}$ poll. longus; carne atra tenui; coccis 3 crustaceis, dorso convexis, intus dehiscentibus. *Semen* oblongum, leviter compressum, testa brunnea nitida.

A not uncommon plant in St. Helena, allied to, but very different from any South African species of the genus. The stipules attributed to this species by De Candolle, appear to be axillary undeveloped subulate buds,—as I find no trace of stipules on young shoots, and no scars on older.—J. D. HOOKER.

Fig. 1. Large-leaved form. 2. Small-leaved form, with flower. 3. Specimen in fruit. 4. Flower. 5. The same, calyx-lobes removed. 6. Stamens. 7. Inferior ovary. 8. Vertical section, and 9. transverse section of same. 10. Fruit. 11, 12. Seed :—*mostly magnified.*

PLATE 1052.

NESIOTA ELLIPTICA, *Hook. f.*

RHAMNEÆ.

N. elliptica, *Hook. f. in Benth. and Hook. Gen. Pl.* 380.—*Phylica elliptica*, Roxb. in Beatson's St. Helena Tracts, Appendix, 316; DC. Prod. ii. 34.

HAB. St. Helena, on the central ridge of Diana's Peak, elev. 2500–2700 ft., *Burchell, Roxburgh*, etc. I have seen only six or eight of these trees on the island, *J. Melliss, Esq.* Wild Olive of the colonists. Flowering in October and November.

Arbor parva, 15–20-pedalis, ramosa ; ramis patentibus robustis teretibus nigris, ultimis petiolo costa foliorum subtus et inflorescentia dense albo-villosis, nodis incrassatis, cicatricibus stipularum delapsarum utrinque 2-notatis. *Folia* opposita, petiolata, exacte oblonga, basi et apice rotundata, 2–3 poll. longa, juniora apiculata, integerrima, marginibus tenuiter revolutis, supra glabra subtiliter reticulata, subtus lana appressa nivea, petiolo crasso $\frac{1}{2}$–$\frac{2}{3}$ poll. ; stipulæ utrinque 2, magnæ, oblongæ, scariosæ, costa valida coriacea villosa. *Cymæ* axillares, pedunculatæ, 2–3-chotomæ, ramosæ, folio dimidio breviores v. æquilongæ, pedunculo $\frac{1}{3}$–$1\frac{1}{3}$ poll. longo stricto. *Flores* pedicellati, albi, bracteati, $\frac{1}{3}$ poll. longi, extus albi, intus rosei, 4–5-meri. *Fructus* obovoideo-clavatus, $\frac{1}{2}$ poll. longus, lignosus, calycis tubo medio cinctus, vertice tumido apiculato, maturus 3-partibilis. *Semina* oblonga, obtuse 3-gona, testa coriacea nitida.—J. D. Hooker.

Fig. 1. Flower. 2. Vertical section of ditto. 3. Stamen. 4. Transverse section of ovary :—*all magnified.*

Platé 1053.

PETROBIUM ARBOREUM, *Br.*

Compositæ, § Senecionideæ.

P. arboreum, *Br. in Linn. Trans.* xii. 113.—*Laxmannia arborea*, Forst. Comm. Gœtt. ix. 56 ; Gen. t. 47. *Spilanthes tetrandra* (masc.) et *Bidens arborea* (fœm.), Roxb. in Beatson's St. Helena Tracts, 301 et 325.

Hab. St. Helena, Diana's Peak, Harding's Spring, etc., *Burchell*, etc. Flowering in January and May. "Whitewood Cabbage-tree" of the colonists.

Arbor parva, dioica, 10–15-pedalis, ligno molli. *Rami* tortuosi, cicatricati, ramulis junioribus et inflorescentia hirtellis pubescentibusve. *Folia* coriacea, opposita, petiolata, $1\frac{1}{2}$–$3\frac{1}{2}$ poll. longa, oblonga lanceolata v. ovata, basi rotundata v. truncata v. in petiolum angustata, acuta v. subacuta, ultra medium serrata, in plantis masculis (ex schedis Burchellii) folia latiora basi sæpius truncata, in fœmineis angustiora et in petiolum angustata. *Paniculæ* axillares v. terminales, 3-chotome ramosæ. *Capitula* erecta, flava, campanulata, pedunculata, $\frac{1}{2}$ poll. longa, mascula latiora. *Involucri foliola* sub-3-serialia, oblonga, obtusa, glabriuscula, coriacea, integerrima. *Receptaculum* paulo convexum, alveolatum, bracteolis involucri foliolis simillimis tot quot floribus onustum. *Flores* ad 30. *Masc. : Ovarium* gracile, scabrum, involucro æquilongum, sæpius 3-setosum, setis scabridis. *Corolla* hypocrateriformis, tubo elongato carnosulo, fauce paulo constricto ; lobi 4, patentes, anguste oblongi, 3-nerves. *Stamina* 4, ore corollæ inserta, omnino exserta, filamentis brevibus validis superne incrassatis ; antheræ lineares, connectivo apice breviter producto, loculis basi vix auriculatis. *Stylus* crassiusculus, ramis linearibus pilosulis acutis. *Fl. fœm. : Ovarium* compressum, pappi setis sæpius 2. *Corolla* maris, sed tubo breviore. *Stamina* parva, antheris liberis cassis.

Stylus maris nisi rami longiores. *Achænium* involucro longius, anguste lanceolato-oblongum, breviter rostratum, compressum, hispido-scaberulum, anguste 2-alatum et antice medio carinatum, lateribus in setas 2 subulatas rigidas breves hispidas productis. *Cotyledones* oblongæ, obtusæ, planiusculæ, radicula tereti.

The affinities of this singular plant are not obvious; at first sight the achene and opposite leaves would appear to place it amongst the *Bidentideæ* of De Candolle, from which it is removed by that author to *Melampodineæ*, apparently on account of the dioecious habit. Brown, who first understood and described its structure, makes no allusion to its affinities; nor can they be well ascertained till the genera of *Melampodineæ* and *Helianthеæ* are revised. —J. D. Hooker.

Fig. 1. Female floret. 2. Apex of achene. 3. Corolla laid open, showing the staminodes. 4. Male floret. 5. Detached stamen. 6. Style-branches of same.

Plate 1054.

LACHANODES PRENANTHIFLORA, *Burch.*

Compositæ, § Senecionideæ.

Lachanodes, *DC.—Capitulum* homogamum, floribus ad 5 albis tubulosis 5-lobis hermaphroditis. *Involucrum* angustum; foliola ad 5, 1-serialia, anguste linearia, acuta, apice non sphacelata, basi calyculata. *Receptaculum* parvum, planum, papillosum, nudum. *Corollæ* tubus elongatus, gracilis, basi dilatatus; limbus angustus; lobi elongati, lineares, revoluti, 3-nerves. *Antheræ* exsertæ, elongatæ, ecaudatæ, connectivo apice brevi. *Styli* rami elongati, filiformes, revoluti, apice truncati, papillosi. *Pappus* pluriserialis, pilis rigidulis scaberulis albis. *Achænium* angustum, angulatum, obscure costatum.—Arbor *parva, ramulis robustis.* Folia *alterna, petiolata, dentata.* Capitula *in paniculas axillares horizontaliter patentes dispositа, pendula.*

L. prenanthiflora, *Burch. in DC. Prod.* vi. 442.—*Mikania arborea,* Roxb. in Beatson's St. Helena Tracts, 313 (non Kunth). *Solidago Leucadendron,* Willd. Sp. Pl. iii. 2054.

Hab. St. Helena, on Diana's Peak, and on Sandy Bay ridge, alt. 2–2500 ft. Flowering October to February. Red or purple Cabbage-tree, *Burchell.* "He" and "She Cabbage-tree," *Roxburgh.*

Arbor parva, 5–15 ped. alta, trunco crasso, cortice pallido, ligno molli, ramis paucis ultimis rubro-purpureis robustis fragilibus. *Folia* apices versus ramulorum sparsa, magnitudine valde varia, in plantis junioribus subsessilia, obovato-lanceolata, 1–2-pedalia, in adultis 2–5-pollicaria, in petiolum brevem v. subæquilongum angustata, obovato-oblonga, obtuse irregulariter dentata, carnosula, superne glabra, nitida, subtus subfurfuraceo-tomentosa v. glabrata, læte viridia, costa purpurea, juniora subtus albo-lanata. *Capitula* ¾ poll. longa.

in paniculas horizontaliter patentes axillares disposita, pendula, ramis ramulis pedunculisque divaricatis gracilibus purpureis, pedicellis pluribracteolatis, bracteolis remotis parvis subulatis. *Involucrum* angustum, floribus brevius, basi bracteolis 1–3-calyculatum ; foliola 6–8, erecta, lineari-lanceolata, acuta, viridia (siccitate brunnea), marginibus interioribus angusto-membranaceis, tenuiter nervosa, apicibus non sphacelatis. *Receptaculum* planiusculum, angustum, papillosum, nudum. *Flores* ad 5, omnes tubulosi. *Pappus* pluriserialis, corolla brevior, pilis tenerrimis scaberulis albis. *Corollæ* pallide flavæ tubus gracilis, basi dilatatus ; limbus tenuis, in lobos 5 elongatos lineares 3-nervos revolutos fissus. *Antheræ* exsertæ, lineares, basi ecaudatæ, filamento superne incrassato. *Styli* rami elongati, filiformes, revoluti, truncati. *Achænium* ad $\frac{1}{7}$ poll. longum, angustum, angulatum, læve, glaberrimum.

A very singular-looking small tree, but I fear generically undistinguishable from *Senecio*, from which it differs technically only in the want of sphacelated apices to the involucral scales, a character of no constancy in *Senecio* itself. Until, however, the Senecionideous genera are worked up from the new materials accumulated since De Candolle's time, it is not possible to say to what extent that heterogeneous Tribe may require subdivision. De Candolle's *L. Leucadendron* is a totally different genus (*Pladaroxylon*, Tab. nostr. 1055), and his doubtful *L. cuneifolia* is probably an *Aster*.—J. D. Hooker.

Fig. 1. Capitulum. 2. Single floret. 3. Pappus-bristle. 4. Stamen. 5. Style-branches.

Plate 1055.

PLADAROXYLON LEUCADENDRON, *Hook. f.*

Compositæ, § Senecionideæ.

Pladaroxylon, *Endl. (sect.)* *Capitulum* heterogamum, floribus albis, radii ligulatis fœmineis, disci 5-lobis tubulosis hermaphroditis. *Involucrum* cylindricum ; foliola ad 10-15, 1-serialia, basi in hypanthium carnosum late obconicum calyculatum connata, linearia, acuta, apice non sphacelata. *Receptaculum* planiusculum, papillosum, nudum. *Flores radii* ad 6–8, ligula brevi lata obtuse 4-dentata ; disci 8–10, corollæ tubo basi liguoso vix tumido lobis revolutis linearibus 3-nerviis. *Antheræ* $\frac{1}{2}$-exsertæ, ecaudatæ, connectivo apice brevi. *Styli* rami revoluti, truncati, apice papillosi. *Pappus* pluriserialis, fuscus, pilis scaberulis rigidulis. *Achænium* anguste oblongum, utrinque angustatum, alte pluricostatum.—Arbor *parva*, *ramulis crassis*. Folia *alterna*, *integerrima*. Capitula *in corymbum terminalem compositum disposita*, *erecta*.

1. **P. Leucadendron.**—*Lachanodes (sectio) Pladaroxylon*, Endl. Gen. 461. *L. Leucadendron*, DC. Prodr. vi. 443. *Solidago Leucadendron*, Forst. Comm. Gœtt. ex Willd. Sp. Pl. iii. 2054 ; Roxb. in Beatson's St. Helena Tracts, 383.

Hab. St. Helena, Diana's Peak, and Cabbage-tree ridge by Caxon's-gate Telegraph, *Burchell*, etc. Flowering November, February. "White Cabbage-tree," *Burchell*. "He Cabbage-tree," *Melliss*.

Arbor parva, robusta, 8–12 ped. alta, ramulis robustis crassitie digiti minoris creberrime cicatricatis glabris. *Folia* versus apices ramulorum conferta, 4–7 poll. longa, obovato-oblonga v. lanceolata, obtusa, irregulariter sinuato-dentata, marginibus recurvis, in petiolum subrobustum brevem angustata, supra lævia, convexa, nitida, subtus pallida, nervis nervulisque creberrime reticulatis exceptis pubescentia, pube tenui appressa, juniora utrinque tomentosa. *Capitula* $\frac{1}{4}$ poll. longa, erecta, in corymbum terminalem ramosissimum 6–8 poll. diametro disposita, pedunculis pedicellisque erectis angulatis paucibracteatis his puberulis crassiusculis paucibracteolatis. *Involucrum* cylindricum, basi incrassatum, bracteolis multis subulatis calyculatum; foliola 10–15, lineari-subulata, basi in hypanthium late obconicum carnosum connata, viridia (siccitate brunnea), crassiuscula, tenuiter nervosa, apicibus subacutis barbellatis non sphacelatis, marginibus anguste membranaceis. *Corolla* alba, radii ligula late obovato-oblonga, apice 3-dentata, disci lobis revolutis 3-nerviis linearibus, tubo basi indurato. *Antheræ* semi-exsertæ, connectivo apice brevi, omnino ecaudatæ. *Stylus* gracilis, basi fusiformis, ramis revolutis truncatis apice obscure papillosis. *Pappus* brevis, multiserialis, fuscus, pilis rigidiusculis scaberulis. *Achænium* $\frac{1}{6}$ poll. longum, anguste oblongum, utrinque attenuatum, creberrime alte costatum.

Certainly a totally different genus from the *Lachanodes prenanthiflora;* and far more different than that is from any other Senecionideous genus; nor, indeed, except in *Senecio* itself, do I find any near affinity for it. From *Lachanodes* it differs in habit, in the terminal erect crowded corymbose panicle, the short capitulum, the involucre much thickened at the base, its many leaflets, the many ray-flowers, woody scarcely inflated base of the corolla-tube, shorter pappus style-arms and corolla-lobes, and in the semi-included anthers; meanwhile I have adopted Endlicher's sectional name of *Pladaroxylon* for it, pending a rearrangement of the Senecionideous genera, which may result in both this species and the *Lachanodes prenanthiflora* forming members of that huge and polymorphous genus.—J. D. Hooker.

Fig. 1. Capitulum. 2. Ray-flower. 3. Arms of its style. 4. Disk-flower. 5. Pappus hair. 6. Stamen. 7. Arms of its style:—*all magnified.*

Plate 1056.

ASTER GUMMIFERUS, *Hook. f.*

Compositæ, § Asteroideæ.

A. gummiferus; arbor parva, gummifera, ramulis lignosis ultimis sparse hispidulis, foliis obovato-spathulatis obtusis in petiolum brevem basi nodoso-incrassatum angustatis grosse serratis coriaceis, subtus et basin versus

sparse pilosis, corymbis subterminalibus ramosis polycephalis, capitulis basi angustis, involucri foliolis inæquilongis lanceolatis rigide chartaceis, floribus radii et disci 6–8, achænio compresso alte costato apicem versus pilosulo.—*Commidendrum spurium*, DC. Prodr. v. 344, excl. syn. (non *Solidago spuria*, Forst., nec *Conyza arborescens*, Willd.).

Var. β, foliis angustioribus subtus sparse subtomentosis, corymbis oligocephalis.—*Commidendrum gummiferum*, DC. l. c.

Hab. St. Helena, Thompson's Wood hill, and ridge above West Lodge, *Burchell*. Central ridge of High Peak. alt. 2700 ft., *Melliss*. Flowering in December, March. "Little Bastard Gum-wood, *Melliss*. "Little umbelled (or cymose) Cabbage-tree," *Burchell*. Var. β, Thompson's Wood hill, *Burchell*. "Cluster-leaved Gum-tree," *Burchell*.

Arbor parva, 10–12-pedalis; rami lignosi, teretes, crassitie pennæ anserinæ, remote cicatricati, ramulis apices versus pilis paucis brevibus remotis subhispidulis. *Folia* apices versus ramulorum subconferta, patentia, $1\frac{1}{2}$–$2\frac{1}{2}$ poll. longa, siccitate luride fusca, petiolo basi ut videtur in sicco cornea et cum ramulo articulata. *Corymbi* plurimi, compositi, pedunculis pedicellisque gracilibus, bracteis linearibus sparsis deciduis. *Capitula* $\frac{1}{4}$–$\frac{1}{3}$ poll. longa, obconica, pedicellata, bracteolata, bracteolis subulatis. *Involucri* foliola stricta, erecta, pallida, enervia, marginibus scaberulis erosis, pappo æquilongis. *Receptaculum* parvum, alveolatum, marginibus alveolarum subfimbrilliferis. *Fl. radii* albi, ligula brevi late oblonga apice 3-crenata; styli rami lineares. *Fl. disci* corolla 5-loba, pallide flava; antheræ omnino exsertæ; styli rami breves, apice cono instructi. *Achænium* purpureum, compressum. *Pappus* parcus, 1-serialis, rufus, pilis scaberulis inæqualibus.

This curious plant differs much in habit and in the form of the involucre from *A. glutinosus* (Plate 1057), but I do not see how it can be removed from *Aster*. Its synonymy is in utter confusion; it is certainly De Candolle's *Commidendrum spurium*, but as certainly is not Forster's *Solidago spuria*; De Candolle quotes, with a mark of doubt, Forster's *Conyza arborescens*, as a synonym, and cites Willd. Sp. Pl. iii. 2053, where *Solidago spuria*, of Forster, is described, but no *Conyza arborescens*, Forst.! On the next page (p. 2054), however, Forster's *Solidago arborescens*, a New Zealand plant, is described. Willdenow's *Conyza arborescens*, again (p. 1994), is a totally different and an Indian plant.

With regard to the var. β, Burchell has ticketed it *Solidago conferta*, Burch., and *cuneifolia*, Roxb., whence it is possibly *Lachanodes cuneifolia*, DC. Another closely allied species is:—

A. Burchellii, *Hook. f.*; arbor parva, ramulis teretibus ultimis lignosis villosis, foliis obovato-lanceolatis grosse serratis supra sparse villosis subtus albo-tomentosis, corymbis axillaribus oligocephalis, capitulis floribusque ut in *A. gummifera*.

Hab. St. Helena, Longwood, *Burchell*, 1810; *Melliss*, 1868.

Very similar to *A. glutinosus*, but the leaves longer and conspicuously white and woolly beneath.—J. D. Hooker.

Fig. 1. Capitulum. 2. Ray-flower. 3. Pappus hair. 4. Style-branches. 5. Disk-flower. 6. Stamen :—*all magnified.*

Plate 1057.

ASTER GLUTINOSUS, *Roxb.*

Compositæ, § Asteroideæ.

A. glutinosus, *Roxb.*; fruticosus, ramulis teretibus lignosis apice foliosis cum foliis et inflorescentia laxe villosis, foliis alternis obovato-spathulatis crenatis rugosis subtus reticulatim venosis, pedunculis terminalibus erectis 1-cephalis paucibracteatis, bracteis linearibus, capitulo late campanulato, involucri foliolis elongato-subulatis, pappo uniseriali, achæniis glaberrimis angustis compressis alte costatis.—Roxb. in Beatson's St. Helena, 303. *Conyza rugosa*, Ait. Hort. Kew. iii. 184; excl. syn. ed. 2, v. 30. *Commidendrum rugosum*, DC. Prodr. v. 345.

Hab. St. Helena, between Longwood's and Gregory's, *Burchell.* Flowering March to May. "Scrubwood" and "Gum-shrub" of the colonists. Also very rare in Ascension, *Burchell, mss.*

Frutex v. *arbor* parva, ramosa, lignosa, ramis teretibus sub-3-chotomis patentibus, ramulis cicatricibus trapezoideis foliorum delapsorum notatis, ultimis crassitie pennæ anserinæ patentim villosis. *Folia* $\frac{3}{4}$–$1\frac{1}{4}$ poll. longa (petiolo incluso), $\frac{1}{4}$–$\frac{1}{2}$ poll. lata, siccitate fusca, patentia, crenata v. dentata, subtus præcipue villosa, superne glabrata v. gummosa. *Pedunculi* solitarii, $\frac{1}{2}$–$1\frac{1}{2}$ poll. longi, stricti, erecti, villosi; bracteæ 1 v. 2, lineares, $\frac{1}{4}$–$\frac{3}{4}$ poll. longæ. *Capitulum* 1–$1\frac{1}{2}$ poll. diametro, radio albo, disco flavo. *Involucri foliola* numerosa, recurva, vix squarrosa, glutinosa, ciliata, coriaceo-herbacea. *Receptaculum* subconvexum, papillosum. *Flores radii* perplurimi, ligulis revolutis. *Pappus* parcus, pilis inæqualibus scaberulis. *Achænia* pallida, apice paulo dilatata.

There can be no doubt but that Roxburgh was right in referring this plant to the genus *Aster*, from which it differs in no respect. With regard to the other species of De Candolle's genus *Commidendrum*, the *C. rotundifolium* is a species of *Psiadia*, and the remainder belong to two forms of *Aster*, one of which, having narrow receptacle and involucre and lanceolate rigid involucral scales, includes *A. gummiferus*, Roxb. (*Comm. spurium*, DC.), (Tab. nost. 1056), and *A. Burchellii*, H.f. (*vide supra*); the other, with broad solitary heads and narrow subulate recurved involucral scales, includes the present plant, and *A. Roxburghii*, H.f. (*C. robustum*, DC.), and a variety of it or a closely allied species.—J. D. Hooker.

Fig. 1. Ray-flower. 2. Hair of pappus. 3. Arms of style. 4. Disk-flower. 5. Stamen. 6. Arms of style :—*all magnified.*

Plate 1058.

FRANKENIA PORTULACIFOLIA, *Spreng.*

Frankeniaceæ.

F. portulacæfolia ; fruticosa, erecta, ramosissima, ramulis puberulis divaricatis, foliis minutis cordatis orbiculatisve convexis marginibus recurvis, floribus solitariis, ovario 2–3-mero. — *Frankenia portulacæfolia*, Spreng. Syst. Veg. ii. 134. *F. Beatsonia*, Schultes, Syst. Veg. vii. 70. *Beatsonia portulacæfolia*, Roxb. in Beatson's St. Helena Tracts, 300 ; DC. Prodr. i. 350.

Hab. St. Helena, dry rocks, Lots ridge, Sandy Bay, and Deep Valley, *Burchell*, etc. Flowering in January. "St. Helena Tea" of the colonists.

Frutex 2–4-pedalis, tortuosus, ramis nodosis fuscis fragilibus gracilibus. *Folia* $\frac{1}{12}$ poll. longa, siccitate atro-fusca, carnosula, puberula, juniora et luxuriantia orbicularia marginibus recurvis, seniora cordata v. globosa marginibus ad costam revolutis. *Flores* terminales, foliis multo longiores, fere $\frac{1}{4}$ poll. longi. *Calycis* lobi 5, breves, obtusi. *Petala* late cuneata, erosa, ungue basi incrassato, lineis 2 exaratis anticis. *Filamenta* 5 v. 6, basi membranaceo-dilatata, subulata. *Ovarium* ovoideum, 2-placentiferum ; stylus columnaris, apice 2–3-fidus, stigmatibus capitatis ; ovula in quavis placenta ad 6.—J. D. Hooker.

A very singular species, closely allied to no other.

Fig. 1. Leaves. 2 and 3. Flowers. 4. Ditto, with the petals removed. 5. A petal. 6. Stamen. 7. Anthers. 8. Ovary. 9. Vertical. 10. Transverse sections of ditto :—*all magnified.*

Plate 1059.

HEMIARRHENA PLANTAGINEA, *Benth.*

Scrophularineæ.

H. plantaginea, *Benth. Fl. Austral.* iv. 518.—*Vandellia plantaginea*, F. Muell. in Trans. Vict. Inst. iii. 62. *Lindernia plantaginea*, F. Muell. Fragm. Phytog. Austral. vi. 102.

Hab. Tropical Australia, Mount King, Glenelg district, N.W. coast, *Marten ;* between Providence Hill and M'Adam Range, *F. Mueller ;* Arnhem Land, *M'Douall Stuart's Expedition.*

Caules e basi crassa perenni sublignosa erecti, tenues, simplices, sæpe ultrapedales, glaberrimi. *Folia* opposita, ad basin caulis pauca conferta fere rosulata, brevissime petiolata, ovata v. late oblonga, obtusa, integerrima, gla-

bra, ½ ad 1½ poll. longa, additis interdum paribus 1–2 secus caulem distantibus parvis fere squamæformibus. *Caules* floriferi cæterum aphylli, scapiformes. *Flores* in racemum oblongum terminalem simplicem conferti, scapo rarius ramis 2 oppositis pariter racemiferis instructo. *Pedicelli* oppositi, brevissimi, glanduloso-pubescentes, bractea parva suffulti, ebracteolati. *Calycis* segmenta 5, angusta, lineam longa, membranacea, costa intensius colorata, glandulis nonnullis ad utrumque latus instructa. *Corollæ* tubus tenuis, circa 3 lin. longus, fauce dilatata; labium superius vix lineam longum, erectum, concavum, integrum; inferius longius, patens, in lobos 3 angustos labium superius æstivatione obtegentes divisum; corolla ubique textura tenuis et *Euphrasiarum* more venosa. *Stamina* 2, versus apicem tubi corollæ inserta, cum lobis labii inferioris alternantia, sub labio superiore ascendentia; superiorum vestigia nulla. *Antheræ* conniventes, liberæ, dimidiatim uniloculare, basi aristato-mucronatæ, rima longitudinali dehiscentes. *Ovarium* biloculare, loculis multiovulatis; stylus filiformis, apice vix dilatatus, obtusus, integer. *Capsula* ovoidea, obtusa, calyci subæquilonga, valvis 2 integris septo tenui parallelis dehiscens. *Semina* numerosa, more Gratiolearum striata reticulataque.

This curious plant is one of those instances of which the Australian flora, like that of tropical Africa, has afforded several, of monotypic genera, connecting as it were large groups—suborders or even orders—which are in other instances clearly and constantly distant. The habit fruit and seeds of *Hemiarrhena* are those of the Lindernieæ, a tribe of Antirrhinidæ, where F. Mueller had originally placed it, but the form texture and æstivation of the corolla, and the structure of the anthers, are characteristic of the Euphrasieæ, a tribe of Rhinanthideæ, and unknown in Antirrhinideæ.—G. Bentham.

Fig. 1. Flower. 2. Corolla cut open (the insertion of the stamens not quite correct). 3. Stamen. 4. Ovary and style. 5. Fruit. 6. Transverse section of the capsule:—*all magnified.*

Plate 1060.

CASSIA VILLOSA, *Mill.*

Leguminosæ, *Tribe* Cassieæ.

C. (Prososperma) **villosa,** *Mill. Dict. n.* 4; fruticosa, pilis stellatis tomentoso-villosa, foliolis 3–5-jugis acuminatis, glandula inter paria 1–2 infima, racemis pedunculatis confertifloris, legumine inter semina constricto articulatoque articulis ovalibus plano-compressis medio ad semen elevatis.—*C. astroites,* Cham. et Schlecht. in Linnæa, v. 597. *Chamæfistula astroites,* G. Don, Gen. Syst. ii. 451. *Cassia geniculata,* Ruiz et Pav. in G. Don, Gen. Syst. ii. 440.

Hab. Tropical America; Province of Oaxaca, Mexico, *Liebmann, Andrieux, n.* 418, and others. The specimens in Miller's and in Pavon's herbaria probably from the same province.

Frutex pluripedalis, undique pilis stellatis dense villosus v. tomentosus,

tomento interdum subfloccoso. *Foliola* 3–5-juga ovato- v. oblongo-lanceolata, acuminata, mollia, 1–2-pollicaria, glandula brevi obtusa v. late globoso-clavata inter paria 1–2 inferiora. *Stipulæ* setaceæ, caducæ. *Racemi* axillares, pedunculati, folio breviores, summi in paniculam subcorymbosam conferti. *Flores* parvi, plures conferti. *Pedicelli* per anthesin 2–3 lin. longi, sub fructu fere semipollicares. *Bracteæ* setaceæ, caducæ. *Sepala* anguste oblonga, obtusa, stellato-tomentosa, 3–3½ lin. longa. *Petala* obovata, vix calyce longiora, pallida, venis purpureis picta. *Antheræ* perfectæ 7, filamentis brevibus, parum inæquales, 3 inferiores in rostrum breve attenuatæ, 4 intermediæ erostres; staminodia 3 parva, oblonga, haud dilatata, brevissime stipitata. *Legumen* lineare, 1–3-pollicare, more Desmodiorum articulatum, articulis 8–15 ovalibus plano-compressis, pube brevi stellata canescentibus, circa 3 lin. longis, 2 lin. latis, medio ad semen longitudinaliter elevatis, ut videtur indehiscentibus. *Seminum* funiculus breviter filiformis.—G. Bentham.

Fig. 1. Flower. 2. Stamen. 3. Ovary and style. 4. The same, longitudinal section: —*all magnified.* 5. Fruit:—*natural size.* 6. One of the articles of the fruit opened, showing the seed and funicle:—*magnified.*

Plate 1061.

CASSIA GONIODES, *A. Cunn.*

Leguminosæ, *Tribe* Cassieæ.

C. (Psilorhegma) **goniodes,** *A. Cunn. Herb.*—Herbacea, erecta, glabra v. pubescens, foliolis 2–3-jugis lanceolatis acutissimis, glandula inter omnia paria, stipulis subulatis, pedunculis axillaribus 2–3-floris, antheris omnibus perfectis, legumine glabro compresso valde arcuato.

Hab. Tropical Australia, York Sound, Greville Island, Usborne's Harbour, all on the N.W. coast, *A. Cunningham.*

Herba erecta, 1–1½-pedalis, simplex v. parum ramosa, glabra v. pube tenui vestita, caule tenui angulato. *Foliola* 2-3-juga, anguste v. late lanceolata, acutissima, 1–2-pollicaria, glabra v. pubescentia, subtus pallida v. canescentia; glandula tenuis inter omnia paria; stipulæ setiformes, 1–2 lin. longæ. *Pedunculi* in axillis superioribus nunc fere filiformes, 1½–2-pollicares, nunc crassiores ½–1-pollicares, apice 2-3-flori. *Pedicelli* 4 5 lin. longi. *Bracteæ* minutæ. *Sepala* latiuscula, obtusa, 2 lin. longa, exteriora paullo minora. *Petala* parum inæqualia, calyce subduplo longiora. *Antheræ* omnes perfectæ, petalis breviores, rimis terminalibus secus latera plus minus decurrentibus dehiscentes, 3 inferiores cæteris paullo longiores, omnes filamento suo subduplo longiores. *Legumen* breviter stipitatum, glaberrimum, nitidulum, valde arcuatum v. interdum fere circinatum, compressum, immaturum jam ultra pollicem longum, circa 3 lin. latum. *Semina* pluirma, obliqua, perfecte matura non vidi.—G. Bentham.

This species, allied in some respects to *C. oligoclada*, F. Muell., was unfortunately overlooked at the time of making up the second volume of the 'Flora Australiensis,' Cunningham's specimen, the only one then known, having been accidentally mislaid in a wrong cover.

Fig. 1. Flower. 2. The same, back view. 3. Stamens,—*all magnified.* 4. Young fruit, *natural size.*

Plate 1062.

MACOWANIA REVOLUTA, *Oliv.*

Compositæ.

Macowania, *Oliv. gen. nov.*—*Capitulum* multiflorum, heterogamum; floribus radii uniseriatis ligulatis femineis, disci tubulosis abortu masculis. *Involucrum* hemisphæricum; squamæ multiseriatæ, imbricatæ, ovatæ v. lanceolatæ, inæquales, rigidiusculæ, subscariosæ, intus glabræ, interiores longiores lineari- vel oblongo-lanceolatæ, obtusæ. *Receptaculum* leviter convexum, epaleaceum. *Corollæ radii* ligulatæ, ligula late oblonga v. elliptica apice 3-denticulata; *disci* tubulosæ, 5-dentatæ. *Antheræ* corolla æquilongæ, lineares, basi utrinque aristatæ. *Stylus fl. radii* longiuscule bifidus, ramis linearibus obtusis glabris intus canaliculatis marginibus longitudinaliter stigmatosis; *fl. disci abortiri* cylindraceus, apice vix aut leviter crassior, extus papillosus, brevissime et obtuse bilobulatus. *Achænium* inappendiculatum, leviter arcuatum, subteres, longitudinaliter valide 14–15-costatum, obsolete puberulum. *Pappus* uniserialis, setaceus, setis liberis rigidis scabridis inæqualibus caducissimis.—Frutex *glanduloso-hirtus, ramis foliosis apice corymbosim ramulosis.* Folia *alterna, sessilia, patentia v. reflexa, rigida, linearia, acuta, marginibus revolutis glanduloso-setulosis.* Capitula *terminalia, solitaria, flava, breviter pedunculata v. subsessilia.*

M. revoluta, *Oliv. sp. unica.*

Hab. Collected on the Mountains of the Buffalo River, British Kaffraria, by P. M'Owan, Esq. Distributed under No. 2013 by the "South African Exchange Club," conducted by the same gentleman.

Folia sæpius conferta, ½–1 poll. longa. *Pedunculi* erecti, foliis superioribus breviores, glanduloso-hirti v. pilosi, ¼ poll. longi, v. interdum capitula subsessilia. *Involucrum* ½ poll. diam., glanduloso-hirtum, squamulis indefinitis marginibus apicem versus discoloribus, exterioribus minutis ovatis, interioribus gradatim longioribus lanceolatis oblongisve appresse imbricatis. *Flores radii* circiter 7–12, ligula subplana; *disci* tubulosi, involucro æquilongi.

I cannot, with any confidence, suggest the affinity of this interesting plant. In habit it approaches *Gymnostephium* (*G. corymbosum*, Harv.), in which genus, moreover, the disk-florets are barren and the pappus is caducous. The

tailed anthers and the achenes remove it, however, from this genus. It may be allied to *Heterolepis*, Cass., but I do not observe any indication of the biligulation of the ray-florets, characteristic of that genus. It differs also in other points.—D. Oliver.

Fig. 1. Leaf. 2. Ray-floret. 3. Style-branches, and 4. Achene of ray-floret. 5. Floret of disk. 6. Bristle of pappus. 7. Detached stamen. 8. Style-branches :—*all magnified.*

Plate 1063.

CASSIA CRASSIRAMEA, *Benth.*

Leguminosæ, *Tribe* Cassieæ.

C. (Chamæsenna) **crassiramea,** *Benth. n. sp.*—Fruticosa, glaberrima, aphylla, ramis valde incrassatis, pedunculis ad nodos solitariis bifloris, antheris vix rostratis, legumine lineari (plano ?).

Hab. South America, Andes of Salta, on dry hills at an elevation of 6000 to 8000 ft., and dry hills, San Vicente, at 6000 ft., *Pearce ;* Bolivia, province of Tarija, *Weddell.*

Frutex erectus, strictus, 1–3-pedalis, glaberrimus, glauco-virens, aphyllus ; ramuli floriferi, rigidi, læves, medio usque ad 4–6 lin. crassi, basi apiceque attenuati. *Folia* nulla, squamulis ad nodos minutis vix conspicuis. *Pedunculi* graciles, sæpe filiformes, 6–9 lin. longi, biflori, pedicellis pedunculo subæquilongis. *Bracteæ* nullæ. *Sepala* tenuia, colorata, interiora late obovata 4–5 lin. longa, exteriora multo minora. *Petala* aurea, inferiora subpollicaria, superiora minora. *Antheræ* perfectæ 7, 3 inferiores incurvæ 3 lin. longæ breviter subrostratæ, filamento altero fere semipollicari, altero circa 4 lin. longo, tertio brevissimo, 4 intermediæ rectæ obtusæ filamentis brevissimis ; staminodia 3, plana, orbiculata, subcordata, antheris perfectis dimidio breviora, brevissime stipitata. *Ovarium* glaberrimum. *Legumen* non nisi ex ovario paullo auctum vidi, perfectum verisimiliter ei *C. aphyllæ* simile (elongatum angustum planumque).

This singular-looking shrub is evidently closely allied to *C. aphylla*, Cav., but the thick branches and numerous large flowers give it a very different aspect.—G. Bentham.

Fig. 1. Stamens. 2. Staminodium. 3. Ovary and calyx :—*all somewhat magnified.*

Plate 1064.

SWARTZIA MATTHEWSII, *Benth.*

LEGUMINOSÆ, *Tribe* SWARTZIEÆ.

S. Matthewsii, *Benth. n. sp.;* ferrugineo-pubescens, foliolis 4–9 alternis ovatis v. oblongo-ellipticis, racemis axillaribus terminalibusque brevibus confertifloris, calyce aperto cyathiformi, petalo anguste obovali, antheris omnibus lineari-oblongis subæqualibus, legumine longe stipitato compresso.

HAB. Prov. Chachapoyas, Peru, *Matthews;* Santa Anna (Bolivia?), at an elevation of 3–4000 ft., *Pearce.*

Frutex elatus v. arbor 10–20-pedalis, ramulis petiolis inflorescentiaque ferrugineo-pubescentibus tomentosisve. *Foliola* 4–9, pleraque alterna, petiolulata, ovata v. oblongo-elliptica, obtusiuscula, basi rotundata v. rarius acutata, 1–2 poll. longa; novella undique tomentosa, pubescentia, demum supra glabrescentia nitidulaque, venis primariis distantibus subtus prominentibus; petiolus communis subteres v. leviter angulatus, $1\frac{1}{2}$–$2\frac{1}{2}$-pollicaris; nec stipulæ nec stipellæ adsunt. *Racemi* foliis breviores, floribundi. *Bracteæ* minutæ. *Pedicelli* 2–3 lin. longi, pubescentes, ebracteolati; alabastra globosa, rufo-tomentosa, 2 lin. diametro. *Calyx* apertus subcoriaceus, cyathiformis, irregulariter sinuato-dentatus, 3 lin. diametro. *Petalum* album, anguste obovale, semipollicare, in unguem longum contractum. *Stamina* numerosa, petalo breviora, parum inæqualia, filamentis basi brevissime subconnatis, calycem superantibus; antheræ breviter lineares v. lineari-oblongæ, vix lineam longæ. *Ovarium* stipitatum, oblongum, villosum, 2–3-ovulatum; stylus subulatus, brevis, stigmate capitellato. *Legumen* immaturum, longe stipitatum, pubescens, falcato-lanceolatum v. semi-lunatum, plano-compressum, circa 1 poll. longum, 4–5 lin. latum, perfecte maturum haud suppetet.

This remarkable species is exceptional in the genus in its open cyathiform calyx; the alternate leaflets and uniform anthers are those of *S. alterna*, Benth., and its allies. The pods of our specimens, which, although unripe, appear to have attained their full size, are perfectly flat, but it is possible that they may become turgid, as in other Swartzias, in ripening.—G. BENTHAM.

Fig. 1. Diagram of the flower. 2. Flower with the calyx removed. 3. Stamens. 4. Calyx, ovary, and style. 5. Longitudinal section of the ovary. 6. Immature fruit cut open, showing one of the seeds.

Plate 1065.

COURSETIA ORBICULARIS, *Benth.*

Leguminosæ, *Tribe* Galegeæ.

C. orbicularis, *Benth. n. sp.;* fruticosa, foliis unifoliolatis, foliolo suborbiculari subtus albo-tomentoso, pedicellis axillaribus 1–3-nis, pedunculo communi subnullo, calycis laciniis lanceolatis, vexillo glabro.

Hab. Pampas (of Bolivia?) at an elevation of 8–9000 ft., *Pearce.*

Frutex 4–6-pedalis, ramosissimus, ramulis inflorescentia foliolorumque pagina inferiore tomento denso molli albidis. *Foliola* ad apicem petioli 2–3-linearis articulata, solitaria, suborbicularia, supra glabra viridiaque, subtus albo-tomentosa, tenuiter pennivenia, ½–1 poll. diametro. *Stipulæ* parvæ, setaceæ, molles. *Racemi* in axillis superioribus, ad flores 1–3 reducti, rhachi communi brevissima, pedicellis 2–4 lin. longis. *Bracteæ* minimæ, setaceæ. *Calyx* 5 lin. longus, extus albido- v. subfusco-tomentosus, usque ad medium v. paullo ultra divisus, dentibus seu lobis acuminatis, 2 summis paullo altius connatis. *Petala* rosea (*Pearce*), calyce paullo longiora, glabra; vexillum suborbiculatum, retusum; alæ anguste obovato-oblongæ; carina obtusiuscula. *Stylus* apicem versus circumcirca barbatus, pilis tamen dorso quam antice brevioribus, stigmate parvo. *Legumen* sessile, glabrum, 1–1½ poll. longum, 3–4 lin. latum, 3–6-spermum.

A second species, closely allied to *C. orbicularis*, but differing in too many particulars to be considered as a variety only, was gathered by Pearce at La Ronca at an elevation of 9–10,000 feet, and may be thus characterized :—

C. eriantha, *Benth. sp. n.;* fruticosa, foliis unifoliolatis, foliolo late ovato v. orbiculari basi late cordato subtus albo-tomentoso, racemis axillaribus laxe 2–4-floris, calycis laciniis e basi lata subulatis, vexillo tomentoso.—*Foliola* 1–2-pollicaria. *Flores* quam in *C. orbiculari* majores, violacei. *Stylus* superne leviter complanatus, latere interiore solo ut in Coursetiis normalibus barbato, nec ut in *C. orbiculari* circumcirca pilosus. *Legumen* glabrum.

The previously known species of *Coursetiæ* have several, usually numerous leaflets, but species with the leaflets exceptionally reduced to a single broad one, occur in *Tephrosia* and other genera where they are normally numerous, and the flowers and fruit of the two present species differ in no essential point from the normal *Coursetiæ*.—G. Bentham.

Fig. 1. Leaf and stipules. 2. Flower. 3. Vexillum. 4. Wing. 5. Keel. 5*. Stamen. 6. Androecium. 7. Ovary and style. 8. Vertical section of the ovary :—*all magnified.*

PLATE 1066.

APHANOCALYX CYNOMETROIDES, *Oliv.*

LEGUMINOSÆ, § CÆSALPINIEÆ.

Aphanocalyx, *Oliv. gen. nov.*—*Calyx* obsoletus v. ad dentes minutos reductus. *Petalum* 1 posticum, bracteolas superans, obovato-cuneatum; petala lateralia et postica obsoleta v. interdum petalum 1 laterale posticum subæquans v. eodem brevius. *Stamina* 10, omnia antherifera; filamenta filiformia, glabra, libera v. basi leviter coalita; antheræ parvæ, late ellipticæ, versatiles, longitudinaliter dehiscentes. *Ovarium* dense pilosum, breviter stipitatum, biovulatum; stylus filiformis; stigma terminale capitatum. *Legumen* . . . .—Arbor *inermis, inflorescentia excepta glabra; foliola unijuga, coriacea, 2–3-nervosa.* Flores *in racemis brevibus axillaribus congesti.* Bracteæ *scariosæ, deciduæ; bracteolæ alabastrum bivalvatim includentes mucronulatæ, per anthesin persistentes.*

A. cynometroides, *Oliv. sp. unica.*

HAB. Mount John, Kongui river, West Tropical Africa. Flowering in September, *G. Mann.*

Arbor 50-pedalis (fide *Mann.*), ramulis foliiferis teretibus glabris cortice cinerascente obductis. *Foliola* unijuga, coriacea, nitida, glabra, oblique semi-elliptica v. obovato-oblonga, breviter acuminata, nervis duobus et nervo tertio exteriore evanescenti longitudinaliter percursa, $2\frac{1}{2}$–$3\frac{1}{2}$ poll. longa, 1–$1\frac{3}{4}$ poll. lata; petiolus crassiusculus, $\frac{1}{4}$ poll. v. brevior, petioluli 0. *Racemi* densiflori, axillares et terminales, solitarii v. fasciculati, 1–$1\frac{1}{2}$ poll. longi. *Bracteæ* late rotundato-ovatæ, obtusæ v. apiculatæ, subscariosæ, longitudinaliter nervosæ, 2 lin. longæ. *Pedicelli* 1–2 lin. longi. *Bracteolæ* ad apicem pedicelli insertæ, late ovato-ellipticæ, mucronatæ, extus strigoso-pilosæ, 2 lin. longæ. *Petalum* posticum rotundatum v. obovatum, basi subcuneatum, bracteolas paullulum superans.

The relations of the few hitherto discovered *Cæsalpinieæ* in which the calyx is obsolete or nearly so, and the buds enclosed between valvate bracteoles are not yet well made out, nor indeed likely to be until more material be forthcoming. In habit our plant is remarkably like a *Cynometra*, in which genus it had been sorted away in the Kew Herbarium.—D. OLIVER.

Fig. 1. Flower. 2. Pistil and persistent bracteoles. 3, 4. Petals. 5. Stamen. 6. Ovary, vertical section:—*all magnified.*

Plate 1067.

SENECIO SNEEUWBERGENSIS, *H. Bolus.*

Compositæ, § Senecionideæ.

C. (Plantaginei) **Sneeuwbergensis,** *H. Bolus, n. sp.;* caudice glabro; caule simplici erecto (1–2-ped.) striato glabrato; foliis coriaceis, radicalibus elongatis anguste lineari-lanceolatis obtusiusculis basi angustatis calloso-denticulatis glabris, caulinis brevioribus linearibus amplexicaulibus auriculis brevissime decurrentibus margine revolutis, capitulis numerosis 20–30-floris luteis in cymis corymbosis strictis v. subfastigiatis confertis, involucri calyculati cylindraceo-campanulati, squamis 12–14 lineari-oblongis apice nigrescente acutatis; floribus radii 5–7, ligula tubo æquilonga, disci involucrum superantibus; achæniis glabris.—H. Bolus.

Hab. Cape of Good Hope; Mountains near Graaff-Reinet, 4300 ft. Flowering in January.—Harry Bolus, Esq.

Fig. 1. Capitulum. 2. Ray-floret. 3. Style-branches of same. 4. Disk-floret. 5. Pappus-bristle. 6. Style-branches of disk-floret:—*magnified.*

Plate 1068.

STACHYARRHENA SPICATA, *Hook. f.*

Rubiaceæ, Tribe Alibertieæ.

Stachyarrhena, *Hook. f. nov. gen.*—*Flores* dioici; ♂ spicati, ♀ solitarii. *Fl. masc.: calyx* cupularis; limbus brevis, truncatus, obscure 5-lobus. *Corolla* subcylindrico-campanulata, coriacea, 5-loba, limbo fauceque intus villoso; lobi 5, breves, ovati, contorti. *Stamina* 5, fauci corollæ inserta, inclusa; antheræ sessiles, lineares, dorso medio insertæ, connectivo apice appendiculato. *Ovarium* effœtum; stylus brevis, stigmate fusiformi acuto piloso. *Fl. fœm.: Calyx* et *Corolla* . . . *Ovarium* pluriloculare?; stylus . . .; ovula numerosissima, horizontalia, placentis 2-lamellatis axi ovarii adnatis affixa, lamellis revolutis margine exteriore ovuliferis. *Bacca* breviter pedicellata, globosa, calycis limbo coronata, pedicello involucello duplici utroque cupulari basi cincto, 4 ?-locularis, polysperma. *Semina* horizontalia, majuscula, plana, testa tenui subfibroso-cellulosa . . . .—Arbores *parvæ, Amazonicæ, glaberrimæ, ramulis lignosis teretibus.* Folia *opposita, gracile petiolata, oblonga v. lineari-oblonga, obtusa, rigide coriacea, siccitate rufo-brunnea, supra sub lente granulata, nervis divaricatis tenuibus.* Stipulæ *intrapetiolares, breves, in cupulam connatæ.* Flores ♂ *in spicas strictas terminales erectas rigidas dispositi, subfasciculati, parvi, albi v. flavidi, ebracteolati.* Bacca *diametro cerasi.*

S. spicata, foliis obovatis oblongisve apice obtusis v. rotundatis, basi in

petiolum angustatis, spicis densifloris foliis dimidio brevioribus.—*Schradera spicata*, Spruce, Herb. 3322.

Hab. Amazon's River, near Santarem, and on the Casiquiari, at Vasiva and Pacimoni, *Spruce*. Flowering in January.

Arbor parva, 15–25-pedalis, irregulariter ramosa, siccitate castanea. *Ramuli* oppositi, divaricati, tennes, cortice atro tecti. *Folia* 3–8 poll. longa, obtusa, coriacea, superne nitida, nervis subtus tenuibus divaricatis. *Spicæ* masculæ 1–2-pollicares, strictæ, multifloræ. *Flores* albi, ad $\frac{1}{4}$ poll. longi.

A very distinct genus, to which is also referable the *Schradera longifolia*, Spruce.—J. D. Hooker.

Fig. 1. Bud. 2. Flower. 3. Corolla laid open. 4 and 5. Stamens. 6. Vertical section of ovary. 7. Transverse section of young fruit :—*all magnified.*

Plate 1069.

BOTHRIOSPORA CORYMBOSA.

Rubiaceæ, Tribe Hamelieæ.

Bothriospora, *Hook. f. gen. nov.*—*Calycis* tubus obconicus; limbi lobi 4 v. 5, oblongi, obtusi, erecti, persistentes. *Corolla* breviter infundibuliformis, fere rotata, fauce villosa; lobi 4–5, oblongi, obtusi, quincunciales. *Stamina* 5, fauci corollæ inserta, filamentis filiformibus exsertis basi pilosis; antheræ breves, oblongæ, dorso insertæ, utrinque obtusæ, recurvæ. *Discus* annularis. *Ovarium* 4- v. 5-loculare; stylus erectus, stigmatibus 4 v. 5 linearibus erectis obtusis; ovula perplurima, placentis tumidis axi ovarii peltatim affixis inserta. *Bacca* parva, subglobosa, succulenta, 4–5-locularis, polysperma. *Semina* minuta, oblonga, testa coriacea profunde foveolata, albumine carnoso; embryo subcylindricus.—Arbor *v. frutex elatus, cortice deciduo, ramulis tenuibus teretibus ultimis et inflorescentia pubescentibus.* Folia *opposita, petiolata, ovato-oblonga.* Stipulæ *intrapetiolares, lanceolatæ, cito deciduæ.* Cymæ *ad apices ramorum terminales, 3-chotome ramosæ.* Flores *parvi, umbellulati, albi, pedicello apice 2-bracteolato.* Bacca *flava.*

B. corymbosa, *Hook. f.*—*Euosmia corymbosa*, Benth. in Hook. Journ. Bot. iii. 219; Walp. Rep. ii. 489.

Hab. North Brasil and Guiana; river Tintaro, *Schomburgk*, 1838, and Rio Branco, *Schomburgk*, n. 794. Mouth of the Solimoes at its juncture with the Amazons, *Spruce*, January, 1851.

There is much in the character of the fruit and seed of this plant that agrees with Gærtner's *Tepesia dubia* (Carp. iii. 72, t. 192, f. 6), but I do not observe the mucilaginous coat of the seed.—J. D. Hooker.

Fig. 1. Flower. 2. Corolla laid open. 3. Vertical section of ovary. 4–5. Transverse sections of ditto. 6. Seed. 7. Vertical section of ditto. 8. Æstivation of corolla-lobes: —*all magnified.*

Plate 1070.

OBBEA TIMONIOIDES, *Hook. f.*

Rubiaceæ, Tribe Timonieæ.

Obbea, *Hook. f. nov. gen.*—*Flores* hermaphroditi. *Calycis* tubus turbinatus; limbus cupularis, truncatus, obscure 4-dentatus. *Corolla* coriacea, sericea; tubus elongatus, fauce paulo dilatata intus glaberrima; lobi 4, breves, patentes, imbricati, 2 exteriores. *Stamina* 4, fauci corollæ inserta, inclusa, filamentis brevissimis; antheræ lineares, dorso infra medium affixæ, basi breviter 2-lobæ. *Discus* inconspicuus, pubescens. *Ovarium* 2-loculare; stylus filiformis, stigmatibusque 2 linearibus inclusis pilosis; ovula in loculis solitaria, ab apice pendula, funiculo incrassato. *Drupa* . . .—Arbor? *ramosa, ramulis teretibus, ultimis sericeo-tomentosis.* Folia *opposita, gracile petiolata, ovato- v. lanceolato-oblonga, nervosa et creberrime reticulatim venulosa, nervis subtus pilosis.* Stipulæ *interpetiolares, squamosæ, caducæ.* Flores *inter minores, in cymas pauciflоras ramosas axillares pedunculatas dispositi; pedicellis infra calycem articulatis et minute bracteolatis.*

O. timonioides, *Hook. f.*

Hab. Sandwich Islands; western end of the Kokala range, *Dr. Hillebrand*, n. 186.

A very distinct genus, differing from *Bobæa* chiefly in the 2-celled ovary and hermaphrodite flowers.

Ramuli teretes, cortice fusco in novellis brunneo, ultimis petiolis et inflorescentia subsericeo-tomentosis. *Folia* 3–5 poll. longa, subcoriacea, leviter falcata, subtus pallida et juniora sericea. *Cymæ* parvæ, oppositæ, breviter pedunculatæ, paucifloræ, dense sericeo-tomentosæ. *Flores* fere ½ poll. longæ. —J. D. Hooker.

Fig. 1. Bud. 2. Vertical section of corolla and stamens. 3. Ditto of ovary. 4. Transverse section of ovary:—*all magnified.*

Plate 1071.

RYTIDOTUS SANDVICENSIS, *Hook. f.*

Rubiaceæ, Tribe Timonieæ.

Rytidotus, *Hook. f. nov. gen.*—*Flores* hermaphroditi. *Calycis* tubus obovoideus; limbus hypocraterimorphus, persistens, lobis 4 late oblongis obtusis recurvis. *Corolla* hypocraterimorpha, fauce intus glaberrima; lobi 4 obovati, unguiculati, recurvi, marginibus late crispatis, valvati, lobis 2 exterioribus. *Stamina* 5, fauci inserta, filamentis brevissimis; antheræ lineares, infra medium insertæ, apicibus exsertis, basi 2-fidæ. *Discus* inconspicuus, hispidus. *Ovarium* 2–5-loculare; stylus elongatus, exsertus, pilosus, stigmatibus 2–5 linearibus; ovula in loculis solitaria, ab apice pendula, funiculo

incrassato. *Drupa* 2–5-pyrena, pyrenis crassis osseis 3-gonis dorso rotundatis, loculo angusto. *Semina* cylindrica, funiculo incrassato apicem putaminis claudente, testa membranacea, albumine parco; embryo cylindricus, cotyledonibus minutis tenuibus.—Arbor *ramosa, ramulis teretibus, ultimis et inflorescentia puberulis.* Folia *opposita, gracile petiolata, recurva, ovata, nervosa, et creberrime reticulatim venulosa.* Stipulæ *interpetiolares, squamosæ, caducæ.* Flores *inter minores, solitarii, axillares, pedicellati, pedicello infra flores articulato minute bracteolato.* Drupa *mole pisi.*

R. Sandvicensis, *Hook. f.—Chomelia ? Sandvicensis*, A. Gray in Proc. Amer. Acad. iv., 'Notes on Rubiaceæ,' p. 6.

Hab. Sandwich Islands; Oahu, solitary on the top of a hill, *Hinds*, 1841, and *Wilkes's Expedition* (fide A. Gray).

This very remarkable plant was discovered by Hinds during the voyage of the 'Sulphur,' and afterwards published from specimens gathered during Wilkes's Expedition to the Pacific, as a doubtful *Chomelia*, by A. Gray, who observes that "When better known, this may prove to be a new generic type," an observation which the structure of the flower gives full force to. Gray describes the drupe as 2-celled; but in all those which I have opened there are 4 or 5 cells, all with perfect seed. The æstivation of the four thick corolla-lobes is unusual, though not unique in the Order, and indeed is what often prevails in plants with thick lobes whose margins grow out and become crumpled on expansion; two lobes are much larger than the others, and the edges of the latter are enveloped by the thickened edges of the former; though in one sense imbricate, in another this æstivation is valvate.—J. D. Hooker.

Fig. 1. Flower. 2. Calyx. 3. Vertical section of calyx and ovary. 4. Portion of corolla and stamens. 5. Transverse section of ovary. 6. Ovule. 7. Fruit. 8, 9. Transverse section of ditto. 10. Section of corolla-lobes in bud :—*all magnified.*

Plate 1072.

TETRALOPHA MOTLEYI, *Hook. f.*

Rubiaceæ, Tribe Timonieæ ?

Tetralopha, *Hook. f. nov. gen.—Flores* hermaphroditi ? *Calycis* tubus brevis, cupulæformis; limbus annularis, integer. *Corolla* infundibuliformis, tubo intus lobisque 4 patentibus valvatis dense barbatis. *Stamina* 4, fauci inserta, filamentis longiusculis sursum incrassatis; antheræ exsertæ, lineari-oblongæ, erectæ, dorso infra medium basi elongata filamento incrassato adnatæ, utrinque obtusæ. *Discus* depressus, pulvinaris. *Ovarium* 2-loculare; stylus 0, stigmatibus 2 brevibus recurvis; ovula in loculis gemina, placentis septo adnatis prominulis inserta, horizontalia, divaricata. *Fructus* . . .— Frutex ? *glaberrimus, ramulis teretibus.* Folia *opposita, breviter petiolata, obovato-oblonga, obtusa v. obtuse apiculata, coriacea, carnosula, siccitate brunnea, nervis tenuibus paucis.* Stipulæ *breves, intrapetiolares, in annulum connatæ.* Cymæ *breves, breviter pedunculatæ, axillares, dense fasciculatæ, pedunculis bracteis annularibus instructis.* Flores *parvi, breviter pedicellati.*

T. Motleyi, *Hook. f.*

Hab. Borneo, *Motley.*

Ramuli teretes, cortice atro tecti, ad nodos subincrassati, internodiis subæqualibus pollicaribus. *Folia* regularia, subæqualia, crasse coriacea, siccitate atro-fusca, 2–3 poll. lata, utrinque lævia, supra subenervia, subtus pallidiora, nervis præcipue ad costam hinc inde foveolatis. *Florum* fasciculi numerosi, floribus ad $\frac{1}{6}$ unc. longis, inconspicuis.

This is a very singular plant indeed, and quite unlike any with which I am acquainted, except *Scyphophora*, which it resembles in general habit, but from which it differs widely in structure. I find no trace of a style, but two small recurved stigmas rise from the centre of the disk. The ovary is extremely small, and owing to this and to the coriaceous texture and black colour of its walls, its interior structure is very difficult to detect. I find (as does Professor Oliver) constantly 2 cells, and 2 collateral ovules, attached to the centre of the septum in each cell. These two ovules are neither erect nor pendulous, but spread horizontally to the right and left respectively of their common point of attachment. In *Scyphophora* the two ovules rise similarly from the same point, whence one ascends and the other descends, and the thickened placenta forms a septum to the cell between the ovules; I find no thickening of the placentas, nor constriction of the cells in this plant.—J. D. Hooker.

Fig. 1. Flower. 2. Corolla laid open. 3. Stamens, 4. Ovary, calyx, disk, and styles. 5. Vertical, and 6. transverse section of ovary :—*all magnified.*

Plate 1073.

GOMPHRENA PEARCEI, *Oliv.*

Amarantaceæ.

Gomphrena Pearcei, *Oliv. n. sp.*—Herbula diffusa, glabra, caulibus pluribus brevibus umbellatis carnosulis, ramulis ex eodem nodo sæpius 4 -5 divaricatis, capitulis numerosis breviter pedunculatis 8–12-floris, bracteis involucralibus herbaceis glabris floribus brevioribus, bracteolis obovato-rotundatis tenuiter albo-membranaceis, perianthii foliolis anguste obliquis basi tubo stamineo adnatis.

Hab. Pogota, 10,000 ft., March, 1804, *R. Pearce.* (This locality I do not find in the Andes. Perhaps Bogota may be meant.)

Radix verticalis, parce ramosa. *Caules* ex eadem radice plures, 2–3 poll. longi, carnosuli, glabri. *Folia* opposita; radicalia evanescentia, caulina ovalia v. lineari-spathulata, obtusa, glabra, crassiuscula, plana, $\frac{1}{4}$–$\frac{3}{4}$ poll. longa. *Flores* hermaphroditi, sessiles, in capitula numerosa terminalia pedunculata congesti, bracteis exterioribus quasi involucrati. *Bracteæ* herbaceæ, crassiusculæ, obovatæ, glabræ, siccitate reticulato-venosæ, integræ v. emarginatæ, floribus paulo breviores; bracteolæ oppositæ, albo-membranaceæ, obovato-rotundatæ, flores excedentes. *Perianthium* 5-phyllum, foliolis tenuissime membranaceis linear-

spathulatis basi angustatis integris v. apicem versus 2–3-denticulatis, tubo stamineo basi adnatis eodem subæquilongis. *Tubus stamineus* campanulatus, apice sinuatus; antheræ lineari-oblongæ, sessiles v. subsessiles, exsertæ. *Ovarium* inclusum, leviter compressum; stylus brevis; stigmata 2, stylo æquilonga.

A near ally of *Gomphrena umbellata*, Remy, Ann. Sc. Nat. sér. 3. vi. 349. —D. Oliver.

Fig. 1. Flower-head. 2. Single flower with bracteoles. 3. Perianth and staminal tube, laid open. 4. Leaf of perianth. 5. Anther. 6. Vertical section of ovary. 7. Embryo.

Plate 1074.

SYNAPTOLEPIS KIRKII, *Oliv.*

Thymelaceæ, § Gnidieæ, §§ Diplostemoneæ.

Synaptolepis, *Oliv. gen. nov.*—*Flores* hermaphroditi, pentameri. *Perianthium* hypocraterimorphum, tubo gracili glabro, limbo 5-partito regulari patente, lobis oblongis imbricatis tubo 3–4-plo brevioribus. *Squamæ* fauci insertæ, in annulum continuum carnosulum confluentes. *Stamina* 10, biseriata, inclusa v. 5 longiora faucem attingentia; filamenta filiformia, in tubo inserta; antheræ adnatæ, oblongæ, obtusæ, inappendiculatæ, filamento 3–6-plo breviores. *Ovarium* subsessile v. breviter stipitatum, angustum, basi subnudum v. squamulis hypogynis laciniatis minutissimis v. obsoletis circumdatum; stylus gracilis; stigma subclavatum. *Nux* ut videtur perianthii tubo arcte indusiatus, tenuiter osseus; semen testa subchartacea glabra . . .—Frutex *verisimiliter, ramosissimus, glaber.* Folia *parva, opposita, subcoriacea.* Flores *axillares, subsessiles.*

S. Kirkii, *Oliv. sp. unica.*

Hab. Zanzibar, *Dr. Kirk.*

Ramuli patentim divaricati, teretes, cortice nigricante lenticellis verruculato obducti, hornotinis inter nodos graciles. *Folia* subcoriacea, ovata v. elliptico-lanceolata, subsessilia v. brevissime petiolata, acuta v. acutiuscula, mucronulata, basi rotundata, margine (sicco) subrevoluta, glabra, subtus pallidiora venulis obscuris, $\frac{3}{4}$–$1\frac{1}{4}$ poll. longa, 5–9 lin. lata; petiolus gracilis, $\frac{1}{2}$ lin. v. brevior. *Flores* axillares, fasciculati, subsessiles, 6–8 lin. longi, bracteolis minutis squamiformibus, tubo gracillimo faucem versus leviter dilatato glabro, limbi lobis oblongis patentibus recurvisve. . . .

There is but a single fruit of this plant at Kew. It is detached, dry, ovoid, smooth, glabrous, and apparently enclosed in the thin persistent base of the perianth-tube. The pericarp proper is bony, thickened above and below. The nucleus of the seed is wanting. In technical characters *Synaptolepis* is allied to *Linostoma*, from which it differs much in habit as well as in the confluent faucial squamæ. Its habit somewhat resembles that of the

Guyanan genus *Goodallia*, which, however, differs very widely in nearly all other respects.—D. Oliver.

Fig. 1. Flower. 2. Perianth, laid open. 3. Stamen. 4. Ovary and base of style 5. Fruit. 6. The same, laid open.

Plate 1075.

GERRARDINA FOLIOSA, *Oliv.*

Samydaceæ, § Homalieæ.

Gerrardina, *Oliv. gen. nov.*—*Flores* hermaphroditi. *Calyx* campanulatus, 5-fidus, tubo brevi, limbi lobis inæqualibus 2 exterioribus brevioribus rotundatis interioribus late ellipticis, æstivatione imbricatis. *Discus* tubum calycis vestiens, punctatus, margine late 5-crenulatus. *Petala* 5, calyce breviora et cum lobis calycinis alternantia, margine disci inserta, ovato-rotundata, basi late cuneata. *Stamina* petalis numero isomera et eisdem opposita, margine disci inserta; filamenta subulata; antheræ . . . *Ovarium* liberum, obovoideum, apice turbinatum v. subtruncatum, pubescente, basi latum, uniloculare; stylus brevis, subulatus, centricus; stigma (ut videtur lobulatum); ovula anatropa 4, in placentis duabus per paria in apice cavitatis pendula. *Fructus* siccus, monospermus. *Semen* pericarpio conforme, pendulum, obovoideum; testa lævis, glabra; embryo et albumen . . .—Frutex *v. arbuscula ?* Folia *alterna, simplicia, coriacea, persistentia, serrulata.* Stipulæ *minutissimæ v.* 0. Flores *parvi, cymosi, pedunculati.*

Frutex (?), ramulis dense foliiferis teretibus crispule pubescentibus deinde glabratis. *Folia* ovalia v. oblanceolata, obtusa v. obtusiuscula v. late acutata, basi angustata, distanter serrulata, coriacea, rigidula, supra sub lente parce puberula deinde glabra, subtus glabra v. primum obsolete puberula, nervo medio prominulo glabro v. basin versus pubescente, venulis inconspicuis; petiolus brevis, pubescens; lamina $1\frac{1}{3}$–2 poll. longa, $\frac{1}{2}$–$\frac{3}{4}$ poll. lata. *Flores* axillares, in cymis paucifloris (1–3-floris) pedunculati, pedunculis erectis substriatis folio brevioribus solitariis gracilibus nudis puberulis 1–$1\frac{1}{2}$ poll. longis, pedicellis brevibus calycem subæquantibus 1–$1\frac{1}{2}$ lin. longis, bracteis minutissimis rotundatis deltoideisve.

Of this remarkable plant the Kew Herbarium possesses but a solitary specimen, good so far as it goes, but not affording material for a complete analysis of the flower and fruit. The margins of the inner calyx-lobes appear to be glandular-denticulate, but they are apt to become early eroded. Unfortunately, I have failed to find an attached anther in the few flowers which I have examined, and in the apparently perfectly formed fruit of our specimen, the nucleus of the seed is wanting. Natal botanists would do well to have an eye to the plant, which, in the Kew Collection, bears simply "Natal," without any indication of precise locality, in the distribution for 1865 of that excellent collector, the late Mr. W. T. Gerrard.—D. Oliver.

Fig. 1. Peduncle and flower. 2. Flower, laid open. 3 and 4. Fruit.

PLATE 1076.

SCLEROLÆNA PARADOXA, *R. Br.*

CHENOPODIACEÆ, § CAMPHOROSMEÆ.

S. paradoxa, *R. Br. Prod.* 410; foliis linearibus, floribus dense glomeratis, perianthiis fructiferis induratis, per 10–20 in massam globosam lanatam muricatam connatis.—*Benth. Fl. Austral.* v. 196.

Suffrutex decumbens, ramosissimus, raro pedem excedens, lana laxa tomentosa dense vestitus. *Folia* alterna, sessilia, anguste linearia, obtusa, mollia, raro ætate glabrescentia, $\frac{1}{4}$–$\frac{1}{2}$ poll. longa. *Flores* in glomerulis sessilibus axillaribus dense conferta, perianthiis minimis profunde 5-fidis. *Stamina* 5, inclusa. *Styli* pars integra inclusa; rami 2, tenues, exserti. *Perianthia* fructifera basi valde aucta, indurata, in massam globosam fere lignosam, lanatam, 5–6 lin. diametro, intus plurilocularem, extus aculeis parvis 1–2 e singulis perianthiis oriundis muricatam connata, lobis perianthiorum minimis emarcidis. *Semina* in loculis massæ (perianthiis singulis) solitaria, subglobosa, rostello brevi ascendente; embryo cyclicus, radicula breviter ascendente, albumine incluso farinaceo.

HAB. Desert interior of New South Wales, Victoria, and South Australia, *R. Brown, F. Mueller*, and various expeditions into the interior.—G. BENTHAM.

Fig. 1. Flower. 2. The same cut open, showing the stamens and pistil. 3. Mass of fruiting-perianths. 4. Section of the same, showing the seed-bearing cells formed by the several perianths:—the dissections *all magnified*.

PLATE 1077.

MONOCOCCUS ECHINOPHORUS, *F. Muell.*

PHYTOLACCACEÆ.

M. echinophorus, *F. Muell. Fragm.* i. 47; *Benth. Fl. Austral.* v. 144.

HAB. Eastern Australia, from Clarence and Richmond rivers to Edgecombe Bay, *F. Mueller, Beckler, Dallachy*, etc.

Frutex glaber, divaricato-ramosus, nunc erectior 5–6-pedalis. *Folia* petiolata, ovata v. lanceolata, obtuse acuminata, basi contracta, 2–4 poll. longa. *Racemi* terminales v. in axillis superioribus, tenues, 3–6-pollicares. *Flores* parvi, secus rhachin dissiti, breviter pedicellati, masculi et fœminei in diversis racemis, v. rarius fœminei nonnulli ad basin racemi masculini. *Bractea* sub pedicello lanceolata, perianthio brevior, pedicello sæpe basi adnata; bracteolæ 2 sub perianthio ipso parvæ. *Perianthii* segmenta 4, mem-

branacea, tenuissima, obtusa, 1 lin. longa. *Stamina* in flore ♂ 10–20, perianthio sublongiora; filamenta anthera paullo breviora, nunc in centro fere flore breviter connata, nunc circa ovarii rudimentum libera. *Ovarium* in fl. ♀ absque staminum rudimentis; carpellum unicum obliquum leviter compressiusculum, margine interiore dense barbata in stylum brevem uncinatum abeunte, dorso lateribusque glochidiato-echinatum. *Fructus* siccus, indehiscens, dense glochidiatus, 2 lin. longus. *Seminis* testa tenuis; albumen unilaterale; embryo transverse plicatus, cotyledonibus latis convolutis.

The genus, consisting of this species only, is, as it were, the Australian representative of the American genus *Petiveria*.—G. Bentham.

Fig. 1. Male flower. 2. Stamens. 3. Female flower. 4. Fruit. 5. The same, longitudinal section.

Plate 1078.

BABBAGIA DIPTEROCARPA, *F. Muell.*

Chenopodiaceæ, § Camphorosmeæ.

B. dipterocarpa, *F. Muell. Rep. Babb. Exped.* 21; *Benth. Fl. Austral.* v. 192.

Hab. South interior of Australia, Stuart's and Elizabeth Creeks, *Babbage;* Cooper's Creek and towards Stokes' Range, *Howitt's and other Expeditions.*

Suffrutex v. *fruticulus* diffusus v. divaricato-ramosus, excepta lana in axillis foliorum parca glaber et plus minus glaucus. *Folia* alterna, linearia v. oblanceolata, crassa v. semiteretia, infra 3 lin. longa, in ramulis junioribus sæpe conferta. *Flores* parvi, hermaphroditi, in axillis foliorum solitarii, sessiles, ebracteati. *Perianthium* urceolatum, fructifer lineam longitudine paullo excedens, basi cava fere $\frac{1}{2}$ lin. longa lataque sub fructu clausa, parte fructifera depresso-globosa, $\frac{3}{4}$ lin. diametro, apice lobis 4–5 parvis membranaceis ciliatis clausa, dorso alis 2–3 breviter stipitatis membranaceis verticalibus late cuneatis v. semicircularibus 2–3 lin. latis appendiculata. *Stamina* 4 (v. 5?) inclusa. *Styli* pars integra inclusa, ramis 2 exsertis subulatis papilloso-hirtis. *Fructus* inclusus, pericarpio membranaceo. *Semen* planum, horizontale, testa membranacea; embryo hippocrepicus, fere annularis, albumen farinaceum circumdans, radicula parum elongata ascendenteque.

The genus consists of this single species, technically separated from others of the tribe by the form of the fruiting perianth.—G. Bentham.

Fig. 1. Flower. 2. The same, cut open, showing the stamens and pistil. 3. Stamen. 4. Ovary, vertical section. 5 and 6. Fruits. 7. Vertical section of the fruit, with the wings cut short. 8. Seed, seen from above:—the dissections *all magnified*.

Plate 1079.

PHYLLOPODIUM KREBSIANUM, *Benth.*

Scrophularineæ, § Gratioleæ.

P. Krebsianum, *Benth. in DC. Prod.* x. 353; ramis ad angulos ciliatis, foliis subsessilibus ovato- v. oblongo-lanceolatis serratis glabris v. floralibus subincisis, corolla ampla calyce pluries longiore.

Hab. Cape Colony, district Somerset E., on grassy slopes of the Boschberg, at an elevation of 3800 ft., *P. M'Owan.*

Herba erecta, ramosa, subpedalis, ramis lineis oppositis elevatis pubescentibus a junctione foliorum decurrentibus instructa, cæterum glabra. *Folia* opposita v. rarius ternatim verticillata, sessilia basique rotundata v. in petiolum brevissimum contracta, ovato- v. oblongo-lanceolata, acuta, serrata, utrinque viridia, glabra v. pilis brevibus paucis conspersa, majora 1–1½-pollicaria trinerviaque, superiora minora 1-nervia obscure pennivenia. *Flores* in spicas breves terminales dispositi, singulis ad axillam folii floralis ovati inciso-dentati corolla brevioris pedicelloque brevissimo basi adnati insertis. *Calyx* anguste campanulatus, 2–2½ lin. longus, semi-5-fidus. *Corolla* (albida fauce aurantiaca?) 8–9 lin. longa, tubo basi contracto fauce ampla, limbo obliquo, lobis 5 latis obtusissimis v. retusis parum inæqualibus. *Stamina* 4, didynama, ad basin faucis inserta, longiora vix exserta; antheræ connectivo crasso, loculo unico adnato longitudinaliter dehiscente. *Stylus* apice integer, leviter incrassatus. *Capsula* oblonga, compressa, calycem excedens, maturam non vidi.

I have determined this pretty plant from the character I gave in the 'Prodromus,' not having any opportunity of comparing it with the original specimen in De Candolle's herbarium. It differs from all others of the genus in its large flowers with the general aspect of a *Chænostoma.*— G. Bentham.

Fig. 1. Flowers and detached floral leaf. 2. Corolla cut open, showing the stamens and pistil. 3. Fruit, not yet ripe.

Plate 1080.

BUTTONIA NATALENSIS, *M'Ken.*

Scrophularineæ, § Gerardieæ.

B. natalis, *M'Ken. in litt. gen. nov.*

Hab. Pine Town, Natal, S. Africa, *E. Button.*

Char. Gen. *Buttonia*, M'Ken. *Calyx* campanulatus, sub anthesi angustus, late breviterque 4-fidus, lobo superiore paullo longiore breviter 2-fido, post anthesin inflatus. *Corolla* tubo recurvo, fauce ampla obliqua, limbi lobis 5 amplis patentibus sub-2-labiatim dispositis, 2 summis minoribus

æstivatione interioribus. *Stamina* 4, didynama, ad apicem tubi inserta; antheræ dimidiatæ, loculo fertili apice brevissime mucronato, sterili staminum superiorum in aristam crassam loculo fertili æquilongam mutato, inferiorum ad rudimentum minimum reducto. *Capsula* subglobosa, calyce aucto inclusa, 2-locularis, loculicide dehiscens. *Semina* plurima, latiuscula, testa laxa hyalina reticulata.

Herba? v. *suffrutex?* pilis brevibus laxis pubescens, siccitate nigricans, ramis laxis (flexuoso-pendulis v. scandentibus?). *Folia* opposita, longiuscule petiolata, pinnatisecta, segmentis 3–5 ovatis inciso-dentatis subsemipollicaribus superioribus confluentibus v. folia inferiora 3-loba. *Pedicelli* uniflori, folio breviores, axillares v. sæpius supra-axillares, gemma abortiva v. ramulo inter pedicellum et folium subtendens oriundo. *Bracteolæ* sub calyce 2, orbiculatæ, sub fructu persistentes et cum calyce auctæ. *Calyx* per anthesin vix semipollicaris, demum 9–10 lin. longus latusque. *Corolla* pulchre rosea, fauce intus intensius colorata, tubo cum fauce pollice longiore, limbo expanso circa 2 poll. diametro. *Capsula* calyce aucto omnino inclusa.

This handsome plant, of which the specimens are accompanied by a coloured sketch of a flowering branch, but without any indication of its stature, is evidently allied to *Graderia*, but with a very different habit and technical characters which do not admit of its being united in the same genus, unless nearly the whole of the *Gerardieæ* be consolidated into the single genus *Gerardia*.—G. Bentham.

Fig. 1. Corolla cut open, showing the stamens. 2. A lower and an upper stamen. 3. Pistil.

Plate 1081.

RANUNCULUS LIMOSELLOIDES, *F. Muell.*

Ranunculaceæ.

R. limoselloides, *F. Muell. ms.;* pusillus, glaberrimus, caule filiformi longe repente ad nodes radicante, foliis ad nodos solitariis binisve anguste elongato-linearibus apice oblongis v. spathulatis obtusis enerviis, floribus solitariis 4-meris, pedunculis folio multo brevioribus, sepalis membranaceis suborbicularibus, petalis anguste linearibus revolutis sepala longe excedentibus, foveola nectarifera suprabasilari, staminibus 8–12, antheris late oblongis, achæniis ad 8 subglobosis, stylo elongato gracili subrecurvo.

Hab. New Zealand, in deep water, Waikare Lake, Waikato, April, 1870, *T. Kirk.*

Herba pusilla, habitu *Limosellæ*. *Caules* spithamæi, cæspitosi, intricati, radicibus simplicibus ad nodos subgeminis. *Folia* 2–3 poll. longa, verisimiliter valde varia, $\frac{1}{8}$–$\frac{1}{4}$ poll. lata, nunc a basi ad apicem sensim dilatata, nunc apices versus spathulata v. oblonga et repente in petiolum elongatum linearem planum angustata. *Flores* $\frac{1}{3}$ poll. diam., pallidi, flavi.

A very singular little species of the *Hecatonia* section, recalling the *R. hy-*

drophilus, Gaud., of the Falkland Islands, in its habit and foliage, but differing widely from that plant in the form of all its floral organs. I am indebted for specimens to Mr. Kirk, of Auckland, and to Dr. Mueller, who received it from Mr. Kirk, and sent it with the MS. name adopted above.—J. D. Hooker.

Fig. 1. Flower. 2. Petal. 3. Stamen. 4. Achene :—*all magnified.*

Plate 1082.

CHALEPOA MAGELLANICA, *Hook. f.*

Pittosporeæ ?

Chalepoa, *Hook. f. gen. nov.* *Flores* solitarii, hermaphroditi. *Calycis* 5-fidi tubus brevissimus, obconicus ; lobi late ovati, obtusiusculi, persistentes. *Petala* 5, sessilia, erecto-patentia, oblongo-ovata, obtusa, contorta. *Discus* 0. *Stamina* 5, hypogyna, erecta, filamentis subulatis infra medium dilatatis ; antheræ parvæ, subdidymæ, rimis postice dehiscentes. *Ovarium* sessile, ovoideum, 3-loculare, in stylum crassum attenuatum, stigmate capitato 3-lobo ; ovula in loculis plurima, angulo interiore 2-seriatim affixa, horizontalia, anatropa, ovoidea. *Capsula* parva, pedicellata, turgida, 3-sulca, basi calyce suffulta, stylo tarde deciduo terminata, 3-locularis, loculicide 3-valvis, polysperma, epicarpio coriaceo, endocarpio crustaceo, valvis demum ab axi seminifero secedentibus. *Semina* parva, oblique obovoideo-rotundata, horizontalia, funiculo brevi crasso, testa crassa crustacea brunnea nitida, raphe inconspicua, tegmine membranaceo apice chalaza notato, albumine carnoso et oleoso ; embryo minimus, cordiformis, hilo proximus, radicula infera —Fruticulus *glaberrimus, sapore dulcamaro, repens, ramosus, caulibus teretibus flexuosis robustis cicatricatis, cortice brunneo ; ramuli surculos* Epilobii *revocantes, breves, adscendentes, dense foliati.* Folia *alterna, sessilia, crassiuscula, basi subimbricata, adscendentia, oblanceolato- v. obovato-spathulata, apice* 3*-crenulata.* Flores *parvi, in apicibus ramulorum solitarii, subsessiles v. breviter crasse pedunculati, pedunculo demum elongato, ebracteati.* Capsula *parva, pedunculata, erecta.*

C. magellanica, *Hook. f. sp. unica.*

Hab. Tierra del Fuego ; Port Famine, *Capt. King.* South Chili ; Port Grappler, lat. 51° S., in marshy ground, *Dr. Cunningham.*

Caules vage repentes, 1–3-pedales, crassitie pennæ corvinæ. *Folia* $\frac{1}{3}$—$\frac{1}{2}$ poll. longa, carnosula, pallide viridia, siccitate pallide flavo-brunnea, superne glaucescentia v. utrinque concolora, costa nervisque paucis valde obscuris, basi angusta semi-amplexicauli, dentibus apicalibus interdum obsoletis. *Flores* sessiles, ebracteati, $\frac{1}{3}$ poll. diam., erecti, *Samolam* revocantes. *Petala* calyce 3-plo longiora, crassiuscula, alba, basi flava. *Stamina* petalis dimidio breviora ; antheræ parvæ. *Ovarium* longitudine staminum. *Bacca* $\frac{1}{4}$—$\frac{1}{3}$ poll. longa. *Semina* in loculis ad 8.

My first knowledge of this most curious little plant was derived from fruiting specimens, collected about forty-three years ago, by Captain King,

R.N., during the surveying voyage of H.M.S. 'Adventure' and 'Beagle.' These were contained in his own herbarium, which he gave me for description in the 'Flora Antarctica,' where I have alluded to this plant under *Desfontainia* (vol. xi. p. 332) as a plant of altogether obscure affinity, possibly allied to *Diapensia*. I again met with it in a collection of Captain King's plants, which had belonged to the late Robert Brown, and which I purchased at the sale of some duplicates of his herbaria in 1859. These specimens are accompanied with a brief description in Brown's handwriting, but no hints regarding its affinity, which, as I gathered from previous conversation with himself, he regarded as unknown. On the occasion for the second survey of the Straits of Magalhaens, under Captain Mayne, R.N., in 1867, I directed the attention of my friend Dr. Cunningham, naturalist to the voyage, to this plant; and he, after many a search, re-found it in 1868, and sent me analyses of the flower, and many dried specimens, collected at Port Grappler, where alone he detected it, he having previously in vain searched the neighbourhood of Port Famine, where King found it.

Of the affinities of this genus I am still very doubtful. With *Diapensia* (a genus which I have elsewhere referred to the immediate neighbourhood of *Loiseleuria* in *Ericeæ*) it has nothing whatever to do. Except in the hypogynous stamens, it accords fairly with *Escallonieæ*. Asa Gray, who lately inspected the plant in the Kew Herbarium, suggested *Pittosporeæ*, with great appearance of reason; the chief differences being the connate calyx lobes, which, however, occur in *Pittosporum* itself, the extrorse dehiscence of the anthers, the very broad base of the ovary giving a perigynous look to the base of the flower, and absence of torus. The fact that the Order *Pittosporeæ* is otherwise confined to the Old World is of less value, when it is considered how much there is in common between Fuegia and New Zealand, the head-quarters of *Pittosporeæ*.

The peculiar bitter-sweet taste of the stems of *Chalepoa* is a curious character, as is the persistence of the seeds, which remain attached to the top of the placentiferous axis in a little shining heap, long after the fall of the valves. Dr. Cunningham's specimens, gathered in December in full flower, present several cases of this.—J. D. Hooker.

Fig. 1. Leaf. 2 and 3. Flowers. 4. Stamen. 5. Pistil. 6. Young fruit. 7. Longitudinal and (8) transverse section of ditto. 9. Unripe seed:—*all magnified.*

Plate 1083.

FUCHSIA KIRKII, *Hook. f.*

Onagrarieæ.

F. Kirkii, *Hook. f.*; procumbens, caule gracillimo elongato prostrato ramoso, foliis parvis longe petiolatis orbiculari-cordatis obscure dentatis, floribus axillaribus solitariis, ovario obovoideo, calycis tubo late campanulato lobis reflexis oblongis obtusis, petalis 0, filamentis brevibus, stylo brevi, stigmate parvo capitellato incluso.

Hab. New Zealand. On the beach of Great Barrier Island, *T. Kirk*, December, 1867.

So similar to *F. procumbens*, A. Cunn. (Hook. Ic. Pl. t. 421), that by habit and foliage it is impossible to distinguish these species; in the flowers, however, they differ widely, those of *F. prostrata* being much more slender with ellipsoid ovary, narrower longer calyx-tube, lanceolate acuminate calyx-lobes, and the large capitate stigma is much exserted. At first I was inclined to suppose that these differences might be sexual, but I should rather regard them as diagnostic of two representative species that possibly had a comparatively recent common origin. It is a remarkable fact that many of the Barrier Island plants differ permanently, though slightly, and some strongly and specifically, from those of the adjacent main island, indicative of a long geographical severance.—J. D. Hooker.

Fig. 1. Flower. 2. The same with the calyx laid open:—*both magnified.*

Plate 1084.

RAPHANOCARPUS KIRKII, *Hook. f.*

Cucurbitaceæ.

Raphanocarpus, *Hook. f. gen. nov.*—*Flores* monoici. *Fl. masc.*: 2–5 ad apicem petioli v. ad basin laminæ folii. *Calycis* tubus parvus, squamulis 3 incurvis fundo sitis; lobi ovati v. lanceolati. *Petala* 5, libera, patentia, obovata. *Filamenta* 3–4, libera, brevia; antheræ 3, una 1-locularis, duæ 2-loculares, cum 2–3 imperfectis interdum interpositis, loculis flexuosis; connectivo angusto v. dilatato, apice non producto. *Ovarii* rudimentum 0. *Fl. fœm.* 1–2 ad apicem pedunculi axillaris, v. rarius cum ♂ orti. *Calycis* lobi et petala ut in ♂, sed minora et angustiora. *Ovarium* elongato-fusiforme, sulcatum, 1-loculare, loculo angusto; stylus brevis, stigmatis lobis 2 compressis rotundatis; ovula 2, remota, superiore erecto, inferiore pendula. *Fructus* parvus, angustus, fusiformis, teres, suberosus, sulcatus, pilosus, 1-locularis, 2-spermus, v. e loculis septo transverso discretis 2-locellatus. *Semina* lineari-oblonga, compressa, superiore erecto, inferiore pendulo, testa hyalina.—Herbæ *annuæ, prostratæ v. scandentes.* Folia *ovato- v. orbiculato-cordata.* Cirrhi *indivisi.* Flores *flavi.* Fructus Raphani *lomentum revocans.*

1. **R. Kirkii,** *Hook. f.*; pilosus, foliis orbiculato-cordatis obtuse angulatis v. 3–5-lobis, lobis acutis integerrimis v. obscure dentatis.

Hab. Mozambique, district of Africa, between Senna and Lupata, and on the Shire, near Shigogo, *Dr. J. Kirk*, January and February, 1859–60.

Caules 3–5 ped. longi, gracillimi, angulati, flexuosi. *Folia* 2–3 poll. longa, membranacea, sinu profundo angusto v. lato. *Fl. masc.*: pedunculi breves, graciles, 2-flori, pilosi, bractea oblonga, pedicellis gracillimis. *Calycis* lobi ¼ poll. longi, ovato-lanceolati; squamulæ fundo tubi breves.

Corolla 1½ poll. diam. *Fl. fœm.:* pedunculi elongati, 1–2-flori. *Fructus* pollicaris, profunde sulcatus, longe rostratus. *Semina* ¼ poll. longa, linearioblonga.

A very curious plant, as to whose close affinity with *Momordica* there can be no question, though differing from that genus by characters that are foreign to the Order, and that vitiate its division into the two otherwise most natural groups, viz. *Plagiospermeæ*, to which *Momordica* belongs, with horizontal ovules, and *Orthospermeæ*, with either pendulous or erect ovules (never, as in this, with one pendulous and the other erect). The confluence of the male peduncle with the petiole is unique in the Order, and that the female peduncle should be in the same specimen sometimes free and axillary and sometimes confluent along with the male peduncle and the petiole, is still more singular. The corky fruit, often septate in the middle, with the seed erect in the upper cell, and pendulous in the lower, recalls *Cakile* amongst *Cruciferæ*.—J. D. Hooker.

Another species, *R. Welwitschii*, will be published in the 'Flora of Tropical Africa.'

Fig. 1. Stamens. 2. Ovary and calyx. 3. The same laid open vertically. 4. Immature seed:—*all magnified.*

Plate 1085.

BREDIA OLDHAMI, *Hook. f.*

Melastomaceæ.

B. Oldhami, *Hook. f.*; fere glaberrima, foliis lanceolatis subacutis fere æquilateris quintuplinerviis serrulatis, nervis 2 interioribus altius insertis, corymbis multifloris, antherarum majorum connectivo basi breviter producto.

Hab. Island of Formosa, near Tamsuy, *R. Oldham*, 1864.

Fruticosus, ramis ramulisque suberectis teretibus. *Folia* 2–3 poll. longa, ¾–¾ poll. lata, subcaudato-acuminata, imo apice obtuse mucronulata, supra luride viridia, subtus pallidiora, subtilissime puberula, costis prominulis, nervulis transversis exilibus, petiolo stricto ½–¾ poll. longo. *Corymbi* 2–3 poll. diam., ebracteati, pedunculis pedicellisque subelongatis strictis. *Flores* ½ poll. diam. *Calycis* tubus infundibuliformis, basi ventricosus, dentibus 4 minutis. *Petala* ovato-oblonga, acuta. *Stamina* declinata; antheræ majores connectivo basi infra loculum producto, apice 2-lobo, minores connectivo non producto. *Stylus* sigmoideo-deflexus.—J. D. Hooker.

Plate 1086.

SAKERSIA AFRICANA, *Hook. f.*

Melastomaceæ.

S. africana, *Hook. f. sp. unica.*

Hab. West tropical Africa; Cameroons river, *Gustav Mann*, January, 1863.

Arbor 20-pedalis, setis brevibus substrigillosus, ramulis divaricatis obtuse 4-gonis. *Folia* 3–5 poll. longa, firme membranacea, elliptico-oblonga, obtusiuscula, basi acuta v. obtusa, integerrima, 5-costata, utrinque viridia, subtus pallidiora, costis nervisque transversis prominulis, petiolo $\frac{1}{2}$ poll. longo. *Paniculæ* ad apicem ramulorum amplæ, pyramidatæ, scabridæ, basi foliosæ, ramis ramulisque robustis patentibus bracteatis, bracteis brevibus oppositis obtusis. *Flores* $\frac{3}{4}$ poll. diam., breviter valide pedicellati, pedicellis basi 2-bracteolatis, bracteolis obtusis deciduis. *Calycis* tubus $\frac{1}{4}$ poll. longus, teres, lævis; limbus brevis, lobis latis. *Petala* oblonga, obtusa. *Stamina* longe exserta; antheræ $\frac{1}{3}$ poll. longæ. *Stylus* curvus, $\frac{1}{2}$–$\frac{2}{3}$ poll. longus. *Semina* vertice appendiculata v. cristata.—J. D. Hooker.

Fig. 1. Stamen. 2. Calyx and style. 3. Fruit. 4. Seed:—*all magnified.*

Plate 1087.

CHÆTOLEPIS LORICARELLA, *Triana.*

Melastomaceæ.

C. (Aplodesmium) **loricarella,** *Triana, in Trans. Linn. Soc.* xxviii. 51.

Hab. New Grenada, Sierra Nevada de Santa Martha, near the snow, *W. Purdie*, June, 1844.

Frutex rigidus, robustus, suberectus, ramulis virgatis fastigiatis foliisque subtus squamulis rigidis crassiusculis appressis imbricatis ovatis triangularibusve onustis. *Folia* $\frac{1}{6}$ poll. longa, dense quadrifariam imbricata, ovato-triangularia, subcarinata, subacuta, intus glabra concava, extus squamulis serrulatis loricata, enervia. *Flores* ad apices ramulorum sessilia, solitaria, $\frac{1}{4}$ poll. diam. *Calycis* tubus turbinatus, lobique breves aucti squamulis dense loricati. *Petala* oblique subrhomboidea, inæquilatera, acuta, latere uno argute dentata. *Filamenta* crassiuscula; antheræ oblongæ, teretiusculæ, obtusæ, poro terminali, connectivo basi non producto obscure tuberculato. *Ovarium* liberum, glabrum, vertice longe squamoso; stylus crassiusculus.—J. D. Hooker.

Fig. 1. Fruit, and 2, side view of leaf. 3. Flower. 4. Flower expanded. 5. Petal. 6. Stamen. 7. Calyx, stamen, and ovary. 8. Vertical section of calyx with enclosed capsule. 9. Transverse section of capsule:—*all magnified.*

Plate 1088.

BRACHYTOME WALLICHII, *Hook. f.*

Rubiaceæ.

Brachytome, *Hook. f. gen. nov.*—*Flores* polygamo-dioici, cum pedicello non articulati. *Calycis* tubus oblongus; limbus cupularis, obscure 5-dentatus, persistens. *Corolla* tubuloso-infundibuliformis, tubo (in fl. ♂ breviore) fauceque intus glaberrimis; limbus brevissime 5-lobus, lobis contortis. *Stamina* 5, fauce corollæ inserta, inclusa, filamentis brevissimis; antheræ medio dorso affixæ, lineari-oblongæ, utrinque obtuse 2-lobæ, antice dehiscentes, in fl. ♀ valde imperfectæ. *Discus* in fl. ♀ parvus, annularis, in fl. ♂ cupularis, major. *Ovarium* 2-loculare; stylus filiformis, in fl. ♂ brevis, stigmatis lobis breviter oblongis obtusis sulcatis; ovula numerosissima, placentis septo peltatim affixis inserta, non immersa. *Bacca* parva, ellipsoidea, 2-locularis, polysperma. *Semina* horizontalia, conferta, pulpo non immersa, cuneata, compressa, testa tenui reticulata, albumine carnoso; embryo parvus, subcylindricus.—Frutex *v.* arbuscula *glaberrima, ramulis gracilibus teretibus.* Folia *opposita, membranacea, petiolata, oblongo-lanceolata, caudato-acuminata, siccitate subtus brunnea.* Stipulæ *intrapetiolares, triangulares, acuminatæ.* Flores *parvi, in cymas graciles paniculatas dispositi; cymæ ex axilla folii non evoluti ortæ, hinc quasi oppositifoliæ; pedicelli graciles, basi minute bracteolati; corolla alba.*

B. Wallichii, *Hook. f. sp. unica.*

Hab. East Bengal, Khasia Mountains, alt. 3–5000 ft., *De Silva* (Wall. Cat. n. 8464 and 8466), *Griffith, Hook. f. and Thomson;* Eastern Himalaya, Darjeeling and Bhotan, alt. 5–6000 feet, *Griffith* (Kew Distrib. n. 2787).

Frutex v. *arbuscula* glaberrima, ramulis teretibus suberectis, nodis sæpe per paria approximatis. *Folia* 4–9 poll. longa, membranacea, obovato-lanceolata, caudato-acuminata, in petiolum perbrevem angustata, siccitate brunnea, costa nervisque numerosis subtus prominulis. *Stipulæ* intrapetiolares, subconnatæ, late ovatæ, cuspidatæ, persistentes. *Cymæ* axillares, breves, effusæ, multifloræ, foliis multo breviores, pedunculis pedicellisque gracilibus, bracteis minutis. *Fl. masc.* parvi, $\frac{1}{6}$ poll. longi. *Calycis* tubus obconicus. *Corolla* subcylindrica, lineolato-punctata. *Fl. fœm.* majores, longiores, $\frac{1}{3}$ poll. longi. *Calycis* tubus elongato-ovoideus. *Corolla* subinfundibuliformis. *Baccæ* longe pedicellatæ, fere $\frac{1}{2}$ poll. longæ, læves, ovoideæ. *Semina* dense congesta, compressa, subcuneata, angulata.

A very distinct genus of *Gardenieæ*, allied to *Randia*, but very distinct in the fruit and form of the corolla.—J. D. Hooker.

Fig. 1. Female flower. 2. The same, with the corolla laid open. 3. Vertical, and transverse sections of ovary. 4. Berry. 5. Transverse section of ditto. 6. Seed. 7. Vertical section of ditto :—*all magnified.*

Plate 1089.

COPTOSAPELTA GRIFFITHII, *Hook. f.*

Rubiaceæ.

Coptosapelta Griffithii, *Hook. f.*; ramulis foliisque subtus molliter tomentosis, foliis breviter petiolatis orbiculato-ovatis v. ellipticis apice abrupte attenuatis obtusis, paniculis terminalibus elongatis foliosis sericeo-tomentosis v. velutinis, ramulis patentibus, calycis velutini lobis triangularibus, corollæ tubo brevi fauce villosa, lobis reflexis linearibus extus sericeis, antheris elongatis dorso pilosis, capsulis turgidis tomentosis.

Hab. Malacca, *Griffith* (Kew Distrib. n. 2789); Singapore, *Dr. T. Anderson.*

Frutex ut videtur scandens, ramulis elongatis. *Folia* 2–2½ poll. longa, coriacea, supra glaberrima, nitida, subtus tenuiter tomentosa, nervis paucis arcuatis, petiolo ¼ poll. longo. *Stipulæ* parvæ, e basi lata in apicem obtusum contractæ, deciduæ. *Panicula* v. pars ramuli florens 3–5 poll. longa, nutans; pedunculi v. rami primarii oppositi, fere horizontales, pollicares, validi, apice 2-bracteati, bracteis linearibus persistentibus 3-floris. *Alubastra* pollicaria, breviter pedicellata, 5-gona, obtusa. *Corollæ* faux longe sericea; lobi lineares, intus glaberrimi. *Filamenta* brevia; antheræ basi 2-fidæ, flexuosæ, acuminatæ. *Stylus* brevis, stigmate fusiformi; placentæ medio septi peltatim affixæ; ovula sursum imbricata. *Capsula* ½ poll. longa, fere globosa, calycis limbo coronata. *Semina* minuta, ala fimbriata circumdata.

Coptosapelta is a very little-known genus, allied to *Cinchona*, of which there are three species known to me: the present plant; the original *C. flavescens*, Korthals (*Stylocoryne macrophylla*, Roxb. sub *Webera*, Wall. Cat. n. 8405), of Borneo, Java, and Malacca, Penang, and Sumatra; and a third undescribed species gathered in Java by Zollinger (Iter Secund. n. 36501).—J. D. Hooker.

Fig. 1. Expanded flower. 2. Stamen. 3. Inferior ovary, style, and stigma. 4. Transverse section of ovary. 5. Longitudinal section of ditto. 6. Capsule. 7. Seeds.

Plate 1090.

TAMATAVEA MELLERI, *Hook. f.*

Rubiaceæ.

Tamatavea, *Hook. f. gen. nov.* *Flores* hermaphroditi, cum pedicello non articulati. *Calycis* tubus brevis, obconicus v. turbinatus; lobi 5, ovato-acuminati, rigidi, erecti, persistentes. *Corolla* late tubulosa, tubo intus fauceque glaberrimis; limbi lobi 5, ovato-acuminati, patentes, contorti. *Stamina* 5, fauci corollæ inserta, inclusa; antheræ sessiles, dorso infra medium insertæ, lineares, utrinque obtusæ. *Discus* annularis. *Ovarium* 2-

loculare; stylus crassiusculus, stigmate elongato-fusiformi sulcato subtorto; ovula numerosa, placentis parvis septo medio affixis inserta, non immersa. *Bacca* parva, ovoidea, coriacea, lobis calycis erectis coronata, 2-locularis, oligosperma. *Semina* pendula, oblonga, compressa, testa crassa fibroso-cellulosa sulcata, albumine carnoso; embryo . . . —Frutex *glaberrimus, sempervirens, ramulis teretiusculis.* Folia *opposita, breviter petiolata, oblonga, acuta, coriacea.* Stipulæ *intrapetiolares, latæ, cuspidatæ, persistentes.* Flores *in fasciculos supra-axillares glomerati, subsessiles, albi, 3-bracteati; bracteæ late ovatæ, acutæ, persistentes.*

T. Melleri, *Hook. f. sp. unica.*

Hab. Madagascar, apparently a common bush, especially on sandy hills near the sea, *Bojer*, *Meller* (1862), *Gerrard* (1866). Flowering in July and August.

Frutex 4–6-pedalis, ramulis divaricatis lævibus. *Folia* firme coriacea, 3–7 poll. longa, in petiolum angustata, abrupte acuminata, siccitate pallide fusca; costa nervisque supra subtusque gracilibus. *Florum* fasciculi paulo supra axillas siti, oppositi, 6–8-flori; bracteæ rigidæ, late ovatæ, acutæ, corolla dimidio breviores. *Calycis* lobi ovario subæquilongi. *Corolla* coriacea, $\frac{1}{2}$ poll. diam. *Antheræ* $\frac{1}{2}$-exsertæ. *Bacca* immatura $\frac{2}{3}$ poll. longa. *Semina* longitudine fere cavitatis baccæ.

I advance this genus as new with some hesitation, because it may prove to be one of the several Madagascarian genera which are so imperfectly or incorrectly characterized in systematic works, that it is impossible to recognize them by their descriptions. It is allied to *Randia*, from which it differs in the small placenta, in which the ovules are not sunk; in the stout testa, seeds not imbedded in pulp, glabrous corolla-throat; and in a form of calyx-limb which rarely occurs in that genus. From *Galeniera*, an Abyssinian genus, with which it more nearly agrees in the structure of the seeds, it differs in the numerous ovules, their insertion, and the calyx-tube and stamens.—J. D. Hooker.

Fig. 1. Flower. 2. Corolla laid open. 3. Stamen. 4. Pistil. 5. Vertical section of ovary. 6. Transverse section of ditto. 7. Berry. 8. Vertical section of ditto. 9. Transverse section of ditto. 10. Seed:—*all but fig.* 7 *magnified.*

Plate 1091.

EMPOGONA KIRKII, *Hook. f.*

Rubiaceæ.

Empogona, *Hook. f. gen. nov.*—*Flores* hermaphroditi, cum pedicello non articulati. *Calycis* tubus subglobosus; lobi 5, parvi, subacuti, persistentes? *Corollæ* tubus cylindricus, fauce densissime et longe barbata; lobi 5, ovato-lanceolati, reflexi, tubo æquilongi, contorti. *Stamina* 5, ore corollæ inserta; antheræ sessiles, reflexæ, exsertæ, anguste linari-subulatæ, dorso basi 2-lobo insertæ, connectivo dorso incrassato in laciniam anguste spathulatam elongatam

producto. *Discus* annularis, depressus. *Ovarium* 2-loculare; stylus filiformis, exsertus, stigmatis lobis 2 brevibus linearibus divaricatis; ovula in loculis gemina, rarius solitaria, facie placentæ carnosæ septo peltatim affixæ immersa. *Fructus ?* . . .—Fruticulus *molliter albo-tomentosus, ramulis tenuibus teretibus.* Folia *pauca, opposita, ad apices ramulorum conferta, obovato-oblonga, acuta, submembranacea.* Stipulæ *majusculæ, late triangulares, longe rigide cuspidatæ, persistentes.* Flores *parvi, axillares, breviter pedunculati, nutantes, pedicellis basi bracteatis et interdum minute bracteolatis calycibusque villosis.*

E. Kirkii, *Hook. f. sp. unica.*

Hab. East tropical Africa; shores of Cape Maclear, on Lake Nyassa, *Dr. J. Kirk*, October, 1861.

Frutex parvus, ramulis teretibus dense tomentosis, nodis subincrassatis, stipulis persistentibus minutis. *Folia* pollicaria, brevissime petiolata, superne cana, subtus niveo-tomentosa, nervis obscuris. *Stipulæ* rigidulæ. *Flores* fasciculati, $\frac{1}{3}$ poll. diam., pedicellis calyce longioribus. *Corolla* ut videtur alba, fauce barba sericea dense longe exserta insigni. *Antheræ* corollæ lobis fere æquilongæ, glaberrimæ, loculis angustis.

A near ally of *Tricalysia*, Rich. (*Bunburia*, Meissn.), *Diplospora*, and other genera of the *Gardenieæ*, with axillary inflorescence and ovules sunk in the fleshy placentas, but apparently differing from all in the ecalyculate flowers or form of the anthers.—J. D. Hooker.

Fig. 1. Flower. 2. Corolla laid open. 3. Anther. 4. Vertical section of ovary:—*all magnified.*

Plate 1092.

LEPTACTINA MANNII, *Hook. f.*

Rubiaceæ.

Leptactina, *Hook. f. gen. nov.*—*Flores* hermaphroditi, basi non articulati. *Calycis* tubus elongato-obconicus, angulatus v. sulcatus; limbi 5-partiti lobi 5, erecti, magni, foliacei, basi intus setis crassiusculis appendiculati, persistentes. *Corolla* hypocraterimorpha, tubo valde elongato sericeo, fauce villosa; lobi 5, patentes, anguste oblongi v. lanceolati, late contorti. *Stamina* 5, fauci corollæ inserta, inclusa; antheræ dorso medio insertæ, sessiles, anguste lineares, utrinque subacutæ. *Discus* depressus v. tumidus. *Ovarium* 2-loculare; stylus filiformis, stigmatibus linearibus liberis v. connatis subacutis exsertis; ovula perplurima, foveolis placentæ septo adnatæ plus minusve immersa, peltata. *Fructus* . . .—Frutices *ramosi, glabri v. sparse pilosi, foliosi, ramulis teretibus.* Folia *opposita, majuscula v. ampla, breviter petiolata, elliptico-obovato-oblonga v. lanceolata, membranacea.* Stipulæ *conspicuæ, intrapetiolares, basi connatæ, amplæ, erectæ, v. recurvæ et quasi inflatæ.* Flores *conspicui, ad apices ramulorum fasciculati, sessiles v. breviter pedicellati, albi ?, fasciculis sessilibus v. stipitatis.*

L. Mannii, *Hook. f.;* ramulis validis, foliis brevissime petiolatis elliptico-obovatis oblongisve obtusis, stipulis recurvis orbiculatis inflatis, calycis lobis pollicaribus oblongo-lanceolatis subacutis, corollæ tubo 3–4-pollicari, lobis 2–3-pollicaribus.

Hab. West tropical Africa; Kongui river, lat. 1° N., *Gustav Mann*, September, 1862.

Frutex 12-pedalis, robustus, ramulis lævibus glaberrimis, crassitie pennæ anatinæ. *Folia* 5–8 poll. longa, coriacea, utrinque glaberrima, siccitate brunnea, nervis utrinque costæ ad 9 patentibus, basi angustata acuta v. obtusa, petiolo brevissimo robusto. *Stipulæ* ramulo latiores, persistentes, $\frac{1}{2}$–$\frac{3}{4}$ poll. diametro. *Flores* subsessiles, erecti, ebracteati. *Calycis* tubus $\frac{1}{4}$ poll. longus; lobi erecti, rigidi, coriacei, minute puberuli, striolati, basi intus setis 2 brevibus crassis aucti. *Corollæ* tubus gracillimus, sericeus; lobi elongato-lanceolati, acuminati, extus sericei, intus glabri. *Antheræ* fere pollicares. *Stylus* pilosus, stigmatibus ad apicem fere connatis.

Closely allied to *Randia*, and perhaps referable to that polymorphous genus, but easily distinguished by the calyx-lobes, corolla and stipules. To the same genus I refer two other West African plants.—J. D. Hooker.

Fig. 1. Portion of calyx, showing the appendages at the bases of the lobes. 2. Portion of corolla-tube laid open, showing the stigma and anthers. 3. Transverse section of ovary: —*all magnified.*

L. involucrata, *Hook. f.;* foliis 8–10-pollicaribus obovatis v. elliptico-obovatis acutis in petiolum gracilem angustatis, stipulis recurvis orbiculatis inflatis, floribus in capitula multiflora longe stipitata basi 2-bracteata congestis breviter pedicellatis, calycis lobis $\frac{1}{4}$ poll. longis ovato-lanceolatis acuminatis, tubo 3–4-pollicari, lobis pollicaribus.

Hab. West tropical Africa; Ambas Bay, *Gustav Mann*, December, 1862.

L. densiflora, *Hook. f.;* foliis 5–6-pollicaribus ellipticis acutis in petiolum brevem pilosum angustatis, costa nervisque subtus pilosis, floribus in capitulum sessile densiflorum congestis, stipulis erectis late obovatis longe cuspidatis, calycis tomentosi lobis $\frac{3}{4}$-pollicaribus lineari-lanceolatis acutis, corollæ tubo 1–1$\frac{1}{2}$-pollicari, lobis lanceolatis $\frac{2}{3}$-pollicaribus.

Hab. West tropical Africa; Abbeokuta, on the Slave Coast, *Dr. Irving*.

L. Senegambica, *Hook. f.;* ramulis ultimis pubescentibus, foliis 2–4-pollicaribus ellipticis obtuse acuminatis subtus puberulis, stipulis erectis late obovatis longe setaceo-cuspidatis, floribus in fasciculos congestis bracteatis, calycis tomentosi lobis lanceolatis acuminatis $\frac{1}{4}$-pollicaribus, corollæ tubo 1$\frac{1}{2}$ poll. longo, lobis $\frac{3}{4}$-pollicaribus ovato-oblongis acutis.

Hab. Senegambia, *Heudelot*, n. 893.

Plate 1093.

PHITOPIS MULTIFLORA, *Hook. f.*

Rubiaceæ.

Phitopis, *Hook. f. gen. nov.*—*Flores* hermaphroditi, cum pedicello non articulati. *Calycis* tubus obovoideus ; limbus campanulatus, apice inæqualiter obtuse 2–3-lobus, persistens ? *Corolla* subcampanulata, limbo calycis paullo longior, 4–6-loba, sericea, fauce hispido-pilosa ; lobi breves, rotundati v. oblongi, obtusi, contorti. *Stamina* 4–6, fauci corollæ inserta, filamentis brevibus, apice barbatis ; antheræ dorso basi fixæ, ½-inclusæ, ovato-oblongæ, obtusæ, basi 2-lobæ. *Discus* depressus. *Ovarium* 2-loculare ; stylus rectus, stigmatibus 2 brevibus oblongis obtusis inclusis ; ovula numerosa, placentis tumidis septo adnatis multiseriatim affixa, non immersa. *Fructus* . . . —Arbores *parvæ, hispido-villosæ, ramulis teretibus.* Folia *opposita, sessilia, obovata v. obovato-lanceolata, acuminata, utrinque hispido-sericea v. villosa, nervis numerosis a costa parallele divergentibus, nervulis creberrimis.* Stipulæ *utrinque* 2, *basi discretæ, erectæ.* Flores *mediocres, in paniculas terminales pedunculatas* 3-*chotome ramosas dispositi, bracteati et bracteolati, albi ; bracteæ subspathaceæ, albo-virides.*

P. multiflora, *Hook. f. ;* tota hirsuto-sericea v. villosa, foliis brevissime petiolatis obovato-oblongis apice abrupte acuminatis v. rotundatis, panicula multi-densiflora ampla.—*Hippotis multiflora,* Benth. in Herb. Spruce, n. 4319.

Hab. Peru, near Moyobamba, *Mathews,* n. 1639 ; low woods on the river Mayo, near Tarapoto, *Spruce,* Fl. Decr. 1855.

Var. *angustifolia ;* foliis anguste oblongis v. oblanceolatis, panicula pauciflora constricta.

Hab. Cum priore.—*Spruce,* n. 4834.

Arbor ramosa, 25–30-pedalis, ramulis elongatis. *Folia* 4–7 poll. longa, subcoriacea, basi obtusa, supra laxe hirsuta, subtus juniora præcipue plus minusve sericeo-hirsuta v. villosa. *Stipulæ* ½–¾-pollicares, acutæ, hirsutæ. *Panicula* densiflora, stipitata, ramis primariis divaricatis foliaceo-bracteatis, bracteis albo-viridibus. *Flores* erecti, conferti, ¼–½-pollicares, albi, subodorati ; bracteola oblonga, obtusa, caduca ; pedicelli calyce longiores v. breviores. *Calyx* ½-pollicaris, hirsutus, limbo sub-2-labiato. *Corolla* calycem vix superans, alba.

This forms a very distinct genus, with the habit of *Hippotis,* of which the name *Phitopis* is an anagram, but differing in the contorted æstivation of the corolla, which is villous in the throat, and in the placentation.—J. D. Hooker.

Fig. 1. Flower. 2. Calyx. 3. Flower, with corolla laid open. 4. Transverse section of ovary. 5. Vertical section of ditto :—*all magnified.*

Plate 1094.

OPISTHOCENTRA CLIDEMIOIDES, *Hook. f.*

Melastomaceæ.

O. clidemioides, *Hook. f. in Benth. and Hook. f. Gen. Plant.* i. 749.

Hab. North Brazil, near San Gabriel da Cachoeira on the Rio Negro, June, 1852, *R. Spruce* (n. 2046).

Fruticulus v. *herba* basi lignosa, glabra, ramulis elongatis gracilibus obtuse 4-gonis, ultimis minute puberulis. *Folia* gracile petiolata, 4–7 poll. longa, late elliptico-ovata, acuminata, membranacea, 3-nervia, nervis transversis laxe reticulatis, petiolo 1–2 poll. longo; juniora late viridia, seriebus 2 macularum albarum utrinque costæ notata. *Cymæ* pulvereæ, axillares, breves, oppositæ, 6–8-floræ. *Flores* subsecundi, breviter pedicellati, ½ poll. diam.; bracteola ad basin pedicelli minuta. *Calyx* ¼ poll. longus, infundibuliformis, basi ventricosus; lobi brevissimi, late apiculati. *Petala* elliptica, ovata, acuta. *Capsulæ* apice dehiscentes, secus rachin cymæ incrassatam elongatam horizontalem secundi, calycis tubo urceolato erecto, breviter crasse pedicellato immersi.—Cetera uti in charactere generico supra citato.—J D. Hooker.

Fig. 1. Calyx. 2. Larger stamen. 3. Smaller stamen. 4. Fruiting-cyme:—*all but fig.* 4 *magnified.*

Plate 1095.

PHYLLACANTHUS GRISEBACHIANUS, *Hook. f.*

Rubiaceæ.

Phyllacanthus, *Hook. f. gen. nov.*—*Flores* hermaphroditi, cum pedicello non articulati. *Calycis* minuti tubus turbinatus; limbus brevis, cupularis, 4-lobus, persistens, lobis subulatis. *Corolla* cylindraceo-campanulata, coriacea, fauce glaberrima; limbi lobi 4, brevissimi, obtusiusculi, valvati. *Stamina* 4, basi corollæ inserta, inclusa, filamentis brevibus; antheræ magnæ, fere basifixæ, lineari-oblongæ, obtusæ, apiculatæ, lateraliter dehiscentes. *Discus* annularis. *Ovarium* 2-loculare v. placentis ab axi retractis 1-loculare; stylus filiformis, superne compressus, stigmate lineari, apice acuto incurvo; ovula numerosa, placentis 2 parietalibus 2 seriatim inserta, non immersa. *Bacca* parva, ovoideo-globosa, crasse coriacea, 1- v. 2-locularis, polysperma. *Semina* numerosa, horizontalia, sub-2-seriata, verticaliter compressa, testa crassiuscula, cellulosa, albumine dense carnoso; embryo parvus, cotyledonibus ovatis, radicula tereti hilo proxima.—Frutex *glaberrimus, aphyllus, rigidus, ramis strictis divaricatis teretibus; internodia spinis magnis*

oppositis lateraliter compressissimis basi valde dilatatis rectis elongatis horrida. Folia *ad basin spinarum parva, decidua.* Stipulæ *minutæ, transversæ.* Flores *in axillis foliorum siti, solitarii, gracile breviter pedicellati, ut videtur penduli.*

P. Grisebachianus, *Hook. f. species unica.—Catesbæa phyllacantha,* Griseb. Cat. Plant. Cub. 122.

Hab. Cuba occid. in litore septentrionali, *Wright,* n. 2655.

Frutex glaberrimus, ramis divaricatis teretibus rigidis uti spinis viridibus. *Spinæ* pollicares, oppositæ, triangulares, basi lata cauli verticaliter adnatæ, $\frac{1}{3}$–$\frac{2}{3}$ poll. latæ, dimidium et ultra internodii æquantes. *Folia* minima, squamulæformia. *Stipulæ* latæ, membranaceæ, truncatæ, caducissimæ. *Flores* $\frac{2}{3}$–$\frac{3}{4}$ poll. longi, in axilla folii ad basin spinæ orti, pedicellis $\frac{1}{4}$ poll. longis gracilibus. *Bacca* pendula, ovoidea, crassiuscula, 2-locularis, septo tenui, v. septo retracto 1-locularis, polysperma. *Semina* pallida.—J. D. Hooker.

Fig. 1. Flower with the corolla laid open. 2. Stamen. 3. Pistil. 4. Transverse section of berry:—*all magnified.*

Plate 1096.

BRACKENRIDGEA ZANGUEBARICA, *Oliv.*

Ochnaceæ.

B. Zanguebarica, *Oliv. sp. nov.;* ramosissima, glaberrima; foliis ovali- v. oblanceolato-oblongis obtusis obtusiusculisve denticulis glanduligeris serrulatis tenuiter coriaceis nitidis venulosis, floribus axillaribus pedicellatis sæpius umbellatim congestis, pedicellis gracilibus flore 4–6-plo longioribus, filamentis antheræ æquilongis.

Hab. Dar Salam, Zanzibar, November, 1869, *Dr. Kirk.*

Folia $1\frac{1}{2}$–$2\frac{1}{2}$ poll. longa, $\frac{2}{3}$–$\frac{5}{6}$ poll. lata; petiolus $\frac{1}{2}$–1 lin. *Pedicelli* capillares, $\frac{1}{2}$ poll. longi.

B. nitida, A. Gray (*Bot. Expl. Exped.* i. 362. *t.* 42), of the Fijis, differs in its much larger coriaceous entire leaves and longer filaments.

I regard *Brackenridgea* rather as a section of *Gomphia* than as a good genus. *Ochna* includes species with dehiscence of the anthers of both *Gomphia* and *Brackenridgea.* The ovule (I have not seen ripe seed) of *B. Zanguebarica* is remarkably curved, as in the original *Brackenridgea.* How far this form may obtain in true *Gomphia* I cannot say.—D. Oliver.

Fig. 1. Expanded flower. 2. Stamen. 3. Pistil. 4. Fruit with but a single lobe matured, the sepals and remains of filaments persisting.

Plate 1097.

MAJIDEA ZANGUEBARICA, *Kirk.*

Sapindaceæ, § Sapindeæ.

Majidea, *Kirk, gen. nov.**—*Flores* monoici; sepala 5, subæqualia, imbricata. *Petala* 4, esquamata, quinti sede vacua, ovalia v. oblanceolata, basi angustata, sepalis paulo breviora. *Fl. masc.:* discus unilateralis, brevissimus, undulatus. *Stamina* 8, intra discum inserta, libera; filamenta filiformia, glabra, exserta; antheræ ellipsoideæ, inappendiculatæ, basifixæ. *Ovarii* rudimentum minutum, trigonum. *Fl. fœm.:* . . . *Fructus* lateraliter trilobatus, coriaceus, loculicide 3-valvis, valvis medio seminiferis. *Semina* in loculis solitaria (v. gemina), exalbuminosa, testa crustacea molliter pubescente, hilo minuto exarillato; embryo crassus, cotyledonibus carnosis contorto-plicatis. —*Arbor* verisimiliter. *Folia* alterna, pinnata, foliolis alternis glabrescentibus. *Flores* in paniculas terminales dispositi.

M. Zanguebarica, *Kirk, sp. unica.*

Hab. Dar Salam, Zanzibar, 1869, *Dr. Kirk.*

Rami teretes, cortice cinerascente lenticellato obducti, ramulis foliiferis apicem versus puberulis mox glabris. *Folia* 5–10-foliolata, primum puberula, deinde glabra nitida, rachide aptera $1\frac{1}{2}$–4 poll. longa, foliolis suboppositis v. alternis ovato-ellipticis apice obtuse parum acuminatis basi obliquis integris membranaceis, 1–$2\frac{1}{2}$ poll. longis, $\frac{1}{3}$–$1\frac{1}{4}$ poll. latis, petiolulo $\frac{1}{20}$–$\frac{1}{12}$ poll. *Inflorescentia* ramulos terminans, multiflora, foliosa, pyramidalis v. corymbosa, rachi ramulis axillaribus pedunculisque puberulis, bracteis ovato- v. elliptico-oblongis obtusis obtusiusculisve tomentellis deciduis $\frac{1}{4}$–$\frac{1}{2}$ poll. longis; floribus fœmineis paucis v. interdum in panicula solitariis ramos v. ramulos laterales cymosim terminantibus, pedicellis calycem subæquantibus. *Sepala* 5, ovato-lanceolata, acutata, utrinque tomentoso-pubescentia, 2 interiora angustiora $\frac{1}{4}$–$\frac{1}{5}$ poll. longa. *Petala* 4, sepalis breviora (in spec. exsicc. purpurascentia), ovalia v. oblanceolata, basi oblique angustata, tenuiter pilosula. *Stamina* 8, subæqualia, exserta, alabastro recurva, filamentis filiformibus glabris, antheris ellipsoideis inappendiculatis dorso affixis bilocularibus, longitudinaliter dehiscentibus. *Fructus* tenuiter coriaceus, inflatus, trigonus, in valvis 3 extus puberulis intus rubescentibus circumscriptione late obovatis $1\frac{1}{4}$–$1\frac{1}{3}$ poll. longis latisque dehiscens. *Semina* subglobosa, nigra, molliter velutina, $\frac{1}{4}$–$\frac{1}{3}$ poll. diam.

Nearly allied to *Cossigyna*, from which it differs in number of stamens and absence of persistent axis after separation of the fruit-valves; to *Erythrophysa*, differing in unisexual flowers, habit, and fruit, if the latter be correctly described in *Erythrophysa* with indehiscent lobes; and to *Kœlreuteria*, in which, besides the difference in habit, the sepals are valvate and the petals squamigerous.—D. Oliver.

Fig. 1. Staminate flower. 2. Rudiment of ovary and unilateral disk of same.

* After the late Sultan of Zanzibar.

PLATE 1098.

STROPHANTHUS KOMBE, *Oliv.*

APOCYNACEÆ.

S. Kombe, *Oliv. sp. nov.*—Arbuscula v. frutex scandens, ramulis crassis scabris novellis hirsutis, foliis brevissime petiolatis late ellipticis obtusis apiculatis junioribus supra breviter hirsuto-scabridis subtus hirsuto-tomentosis, cymis paucifloris terminalibus hirsutis, bracteis lineari-lanceolatis caducis, lobis calycinis linearibus acuminatis corollæ tubo brevioribus.

HAB. South tropical Africa, Zambesi-land. "Various places between the coast and the centre of the continent above the Victoria Falls," *Dr. Kirk.* Flowering in October and November. Manganja Hills, 2000 ft., 1861, *Dr. Meller!* Kombe Arrow-poison of the natives.

Our flowering specimens, although not all that could be wished, I think justify the separation of this plant from *Strophanthus hispidus*, DC., of West tropical Africa, one of the Arrow-poisons of Nigritania. *S. Kombe* differs in the few-flowered inflorescence and the narrower (linear not lanceolate) and shorter calyx-lobes, which do not reach to the narrow sinuses of the throat of the corolla as in *S. hispidus.*

The firmer texture of the calyx and bracts, and the early fall of the latter, appear additional minor distinctions. The follicles entirely correspond in the two species. The physiological action of the Kombe poison, obtained from the seeds, has been investigated by Dr. Thomas R. Fraser, who includes it in the class of cardiac poisons. (*Vide* Proc. Royal Soc. Ediub., 1860–70, p. 99.)

Dr. Meller describes the Kombe as a "tree of 15 feet growing on rocks;" Dr. Kirk, (in Dr. Fraser's Memoir, l. c.) as "a woody climber growing in the forest, both of the valleys and hills."

Extremities the thickness of a stout quill, often being scabrous from the persistent indurated tuberculate bases of the coarse deciduous hairs which clothe the annual leafy shoots; much compressed at the nodes. *Leaves* perhaps hardly fully developed in our specimens, $2\frac{1}{2}$–$3\frac{1}{2}$ in. long, 2–$2\frac{1}{2}$ in. broad, coarsely scabrid-hirsute above, thickly clothed beneath with a paler coarse tomentum. *Pedicels* hirsute, equalling or shorter than the calyx. *Calyx-lobes* $\frac{1}{2}$–$\frac{2}{3}$ in. long, $\frac{1}{12}$–$\frac{1}{8}$ in. broad, glabrescent within, below hirsute externally, subcoriaceous, narrowed from the base. *Corolla* puberulous, or subhirsute below externally; lobes elongate, brittle when dry, probably 2 in. long or longer; appendages of the throat bifid, each lobe triangular. *Anthers* subsessile, glabrous, narrowed from the auricled base to a finely pointed apex. *Ovary* bifid, densely hirsute. *Follicles* $\frac{3}{4}$–1 ft. long, or rather longer, glabrate, dark brown and longitudinally striate when dry, narrowed above into a stout appendix terminating in a subpeltate disk $\frac{1}{3}$ in. in diameter.—D. OLIVER.

Fig. 1. Corolla laid open, the attenuated lobes removed. 2. Stamen, front and side view. 3. Pistil. 4. Portion of reduced follicle.

Plate 1099.

IPOMŒA HABELIANA, *Oliv.*

CONVOLVULACEÆ.

I. Habeliana, *Oliv. sp. nov.;* glaberrima, caule prostrato subtereti lævi, foliis lanceolatis v. ovalibus acutis aristato-mucronatis basi obtusiusculis v. cuneatis leviter undulatis membranaceis, nervo crassiusculo prominulo, pedunculis axillaribus 1(–2 ?)-floris folio brevioribus, sepalis inæqualibus ovato-oblongis obtusis exterioribus brevioribus, corolla alba calyce 4–5-plo longiora infundibuliformi tubo longo, staminibus exsertis.

HAB. On inland rocks, Hood Island, Galapagos, *Dr. Habel!*

Folia 4–6 poll. longa, 1–2 poll. lata; petiolus $\frac{1}{2}$–$1\frac{1}{2}$ poll. *Pedunculus* 1–$1\frac{1}{2}$ poll., pedic. $\frac{1}{2}$–1 poll. *Sepala* interiora $\frac{3}{4}$ poll.; corolla 3–$3\frac{1}{2}$ poll. longa.—D. OLIVER.

Fig. 1. Corolla laid open. 2. Detached stamen. 3. Ovary. 4. Stigma. 5. Transverse section of ovary.

Plate 1100.

PASPALUM BURCHELLII, *Munro, mss.*

GRAMINEÆ.

P. Burchellii, *Munro, mss. in Herb. Burchell. Bras. n.* 6844; annuum; culmo erecto glabro (4–10 poll.), foliis linearibus attenuatis vaginisque patentim pilosis, racemis ($\frac{1}{2}$–$\frac{3}{4}$ poll. longis) 4–5 alternis distichis interstitia sæpius longioribus falcato-recurvis, axi partiali membranaceo-alato spiculas obvolvente, fronte septulo prominulo angusto alternatim pedicellos 2-fidos geniculatos setigeros emittente, spiculis imbricatis sub-2–3-serialibus plano-convexis, gluma vacua unica (fl. neutro, *auct.*) plana hyalina oblanceolato-oblonga, exteriore (gluma superiore, *auct.*) deficiente, gluma florigera concava extus tuberculata, palea infra medium late conduplicata.

HAB. Near Goyaz, *Dr. Burchell!*

In general habit approaching *P. falciferum*, Trin., in the absence of empty glumes *P. Gardneriarum*, Nees in Kew Journ. Bot. ii. (1850) 103.—D. OLIVER.

Fig. 1. Raceme. 2. Spikelet closed. 3 and 4. Same laid open. 5. Genitalia.

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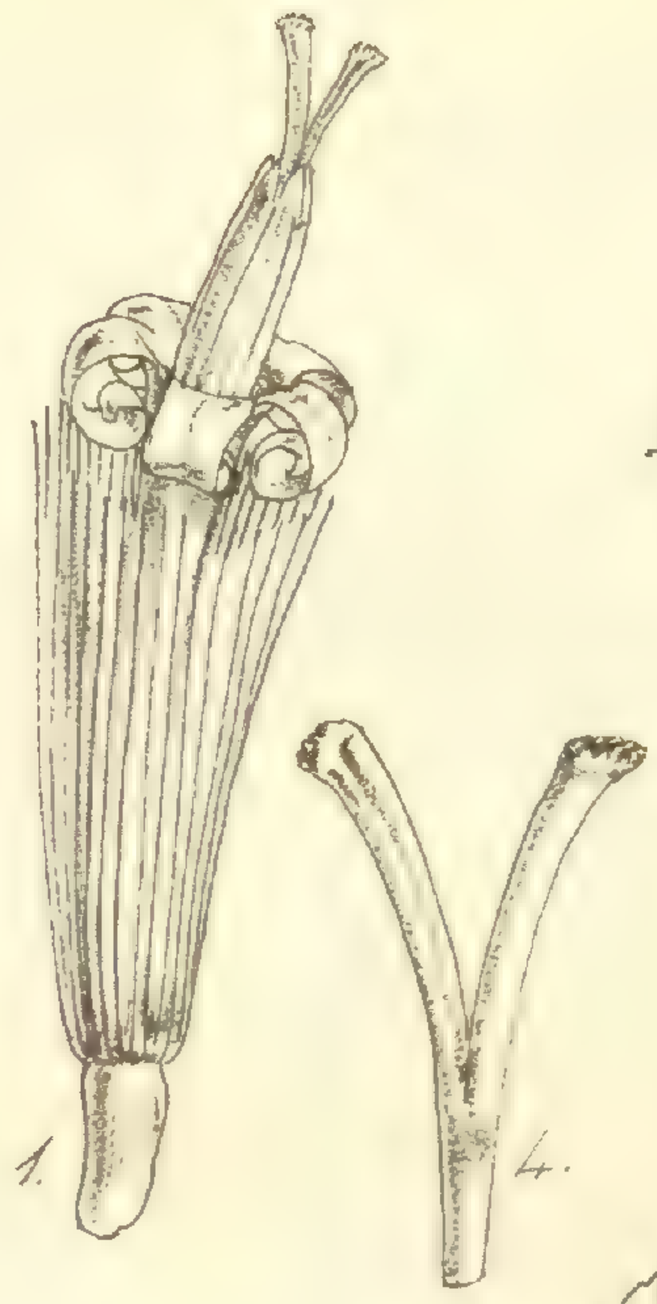
Hermas villosa, *Thunb.*



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Traversia baccharoides. *Hk. f.*

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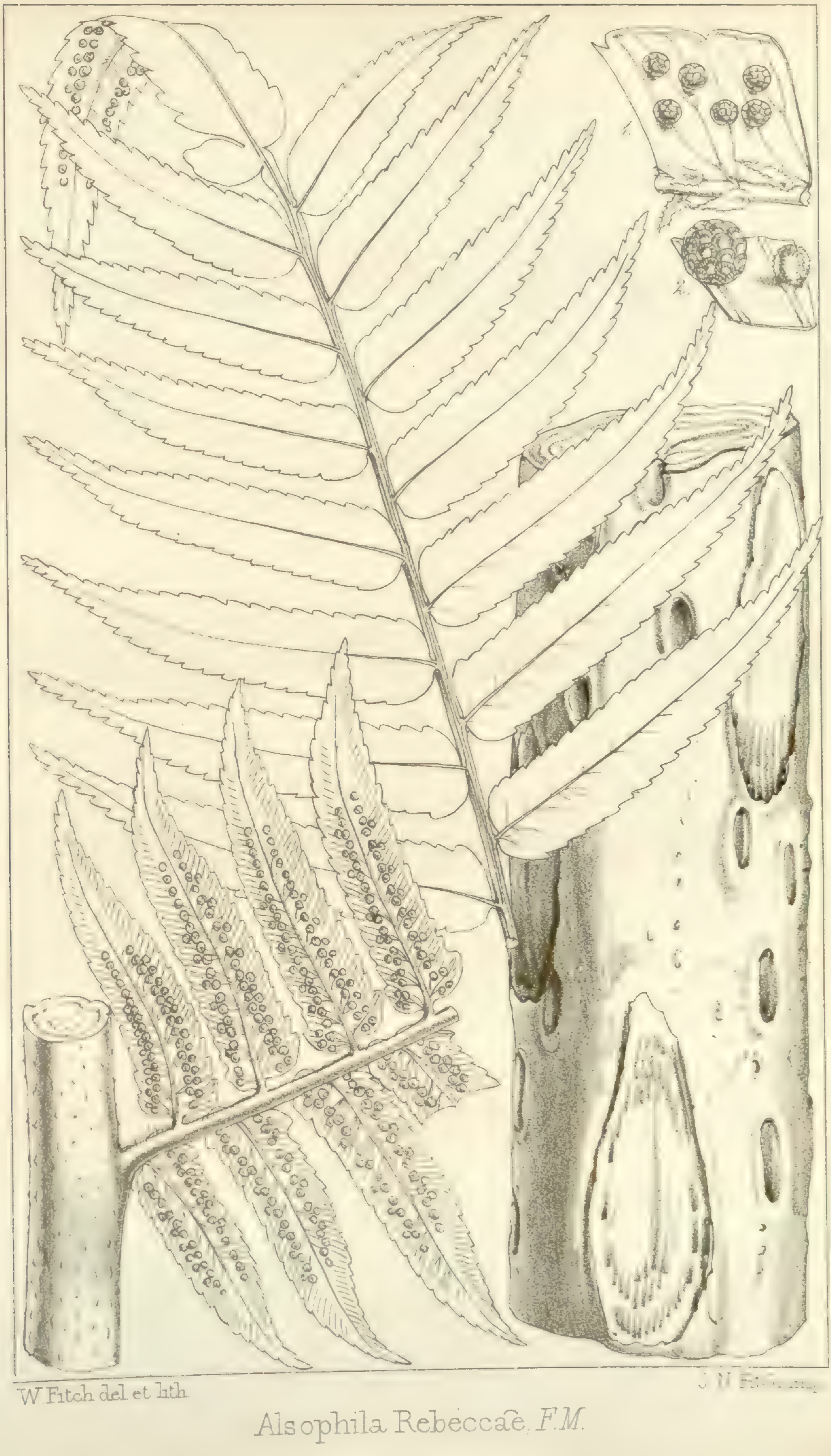
Berzelia (Mniothamnea) callunoides, *Oliv.*



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Sindora Wallichii, *Benth.*

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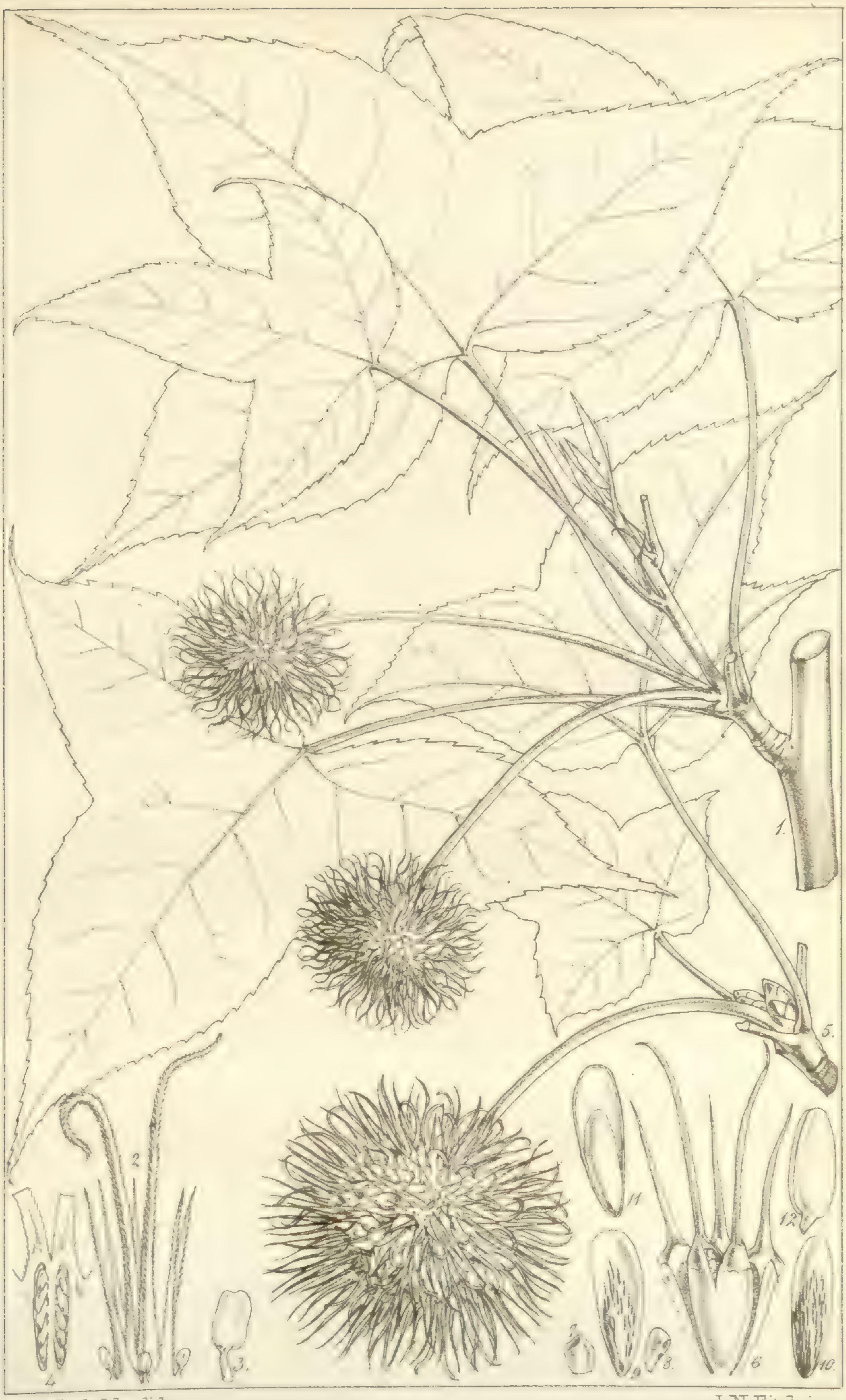
Liquidambar orientalis, *Mill.*



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Liquidambar Formosana, *Hance.*

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Physalis begonifolia, *Roxb.*

Hook. fil. anal. Fitch, lith.

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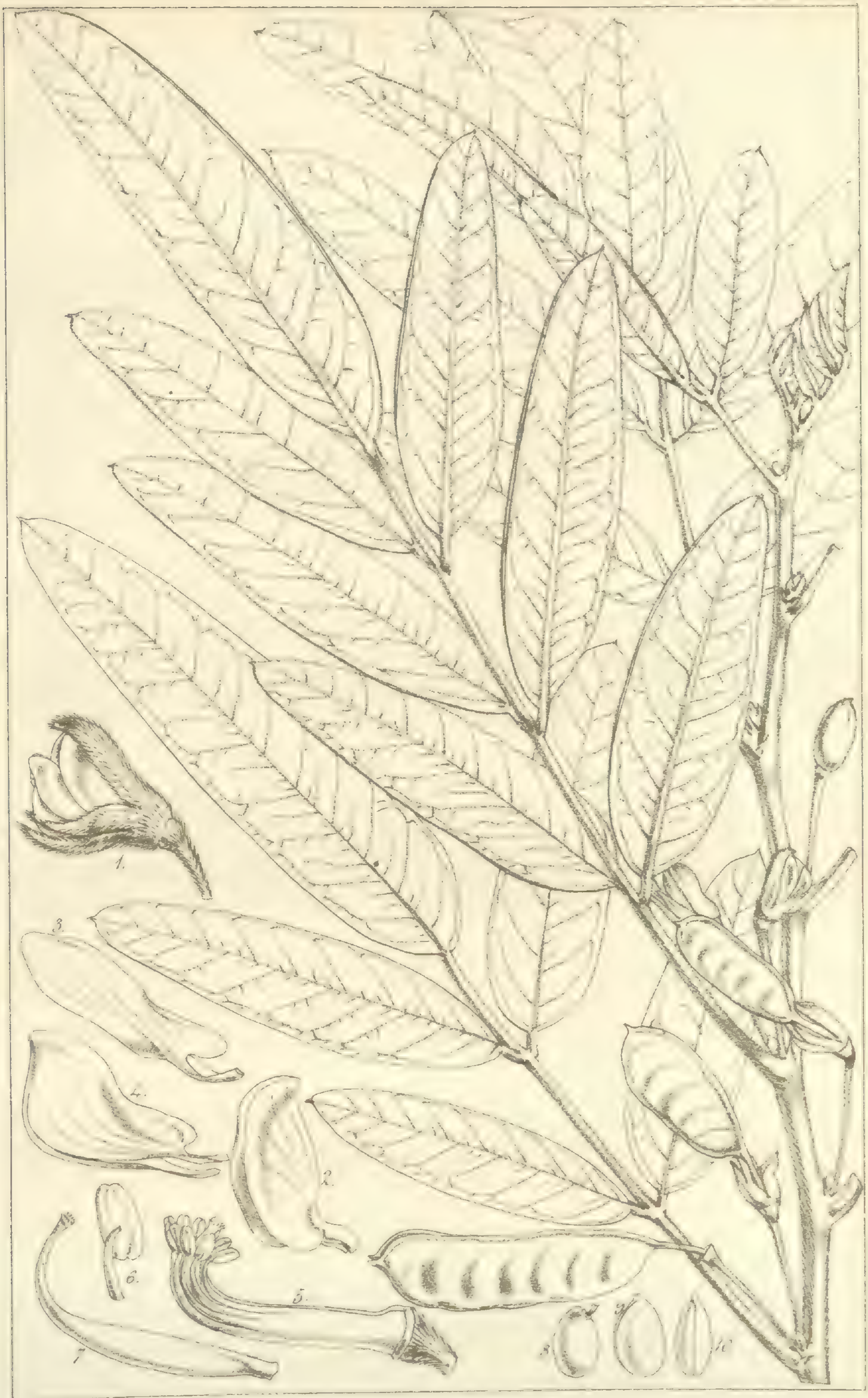

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Lamprolobium fruticosum, *Bth.*

W H Fitch lith

J N Fitch imp

Ellipeia cuneifolia, *Hk.f.&T.*

W H. Fitch, del et. lith.

J N Fitch imp.

Dampiera trigona, *DeVr.*

W.H. Fitch, del. et lith.

J.N. Fitch, imp.

Dampiera alata, *Lindl.*

W. H. Fitch, del. et lith.

J. N. Fitch, imp

Catospermum Muelleri, *Benth.*

W. H. Fitch, del et. lith.

J. N. Fitch, imp.

Dasylepis racemosa, *Oliv.*

W. H. Fitch, del. et lith.

J. N. Fitch, imp.

Lepidostephium denticulatum, *Oliv.*

D^r Burchell, del. Fitch, lith. J.N.Fitch, imp.

Hedyotis arborea, *Roxb.*

T. 1021

W.H. Fitch, del et lith.

J.N. Fitch, imp.

Sium Helenianum, *Hk. f*

W H. Fitch, del. et lith.

J N Fitch, imp.

Lichtensteinia Burchellii, *Hk. f.*

W.H. Fitch, del. et lith.

J.N. Fitch, imp.

Mesembryanthemum cryptanthum, *Hk f.*

1.

2.

3.

4.

5.

W H. Fitch, del. et lith.

J.N. Fitch, imp.

Pharnaceum acidum, *H.f.*

W.H. Fitch, del et lith.

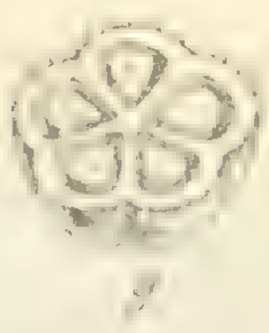
J.N. Fitch, imp.

Kirkia acuminata, *Oliv.*

D. 0. del. Fitch, lith.

J.N. Fitch, imp.

Arceuthobium cryptopodum, *Eng.*



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Brachyloma ericoides, *Sonder.*

Adinandra Mannii, *Oliv.*

W.H. Fitch, del. et. lith.

J N Fitch, imp.

Xanthostemon chrysanthus, *F. Muell.*

W.H Fitch, del. et lith.

J.N Fitch, imp.

Osbornia octodonta, *F. Muell.*

W.H. Fitch, del. et. lith.

J N Fitch imp

Lysicarpus ternifolius, *F. Muell.*

W.H.Fitch, del et.lith.

J.H.Fitch, imp

Rhodomyrtus macrocarpa, *Benth.*

W.H. Fitch, del. et lith.

J. N. Fitch, imp.

Leitneria Floridana, *Chap.*

W.H.Fitch, del. et lith.

J.N.Fitch, imp.

Melanodendron integrifolium, *D.C.*

W H. Fitch, del et lith.

J.N. Fitch, imp.

Hectorella caespitosa, *Hk. f.*

Pygmaea ciliolata, *Hk. f.*

W.H.Fitch, del et lith.

J.N.Fitch, imp.

Pygmaea pulvinaris, *Hk. f.*

W. H. Fitch, del. et lith.

J. D. Fitch imp.

Silvianthus bracteatus, *Hk. f.*

W.H.Fitch, del. et. lith.

J.N. Fitch, imp

Polyura geminata, *Hk.f.*

W.H.Fitch,del et.lith.

J.N.Fitch,imp.

Limnosipanea Spruceana, *Hk.f.*

W.H.Fitch, del. et lith.

J.N.Fitch, imp.

Phylica ramosissima, *D.C.*

WH Fitch del et lith.

J H Bacharach

Nesiota elliptica, *Hook. fil.*

W. H. Fitch, del. et lith.

J. N. Fitch, imp

Petrobium arboreum, *R. Br.*

Lachanodes prenanthiflora, *Burch.*

W.H.Fitch del. et lith

J.N.Fitch imp.

Pladaroxylon leucadendron *Hook. fil.*

Aster gummiferus; *Hook. fil.*

W.H. Fitch, del et lith.

Aster glutinosus, *Roxb.*

W.H. Fitch, del. et lith.

J.N. Fitch, imp.

Frankenia portulacifolia, *Spreng.*

W.H.Fitch.del et lith.

J.Nash,imp.

Heniarrhena plantaginea. *Benth.*

W. H Fitch, del. et. lith.

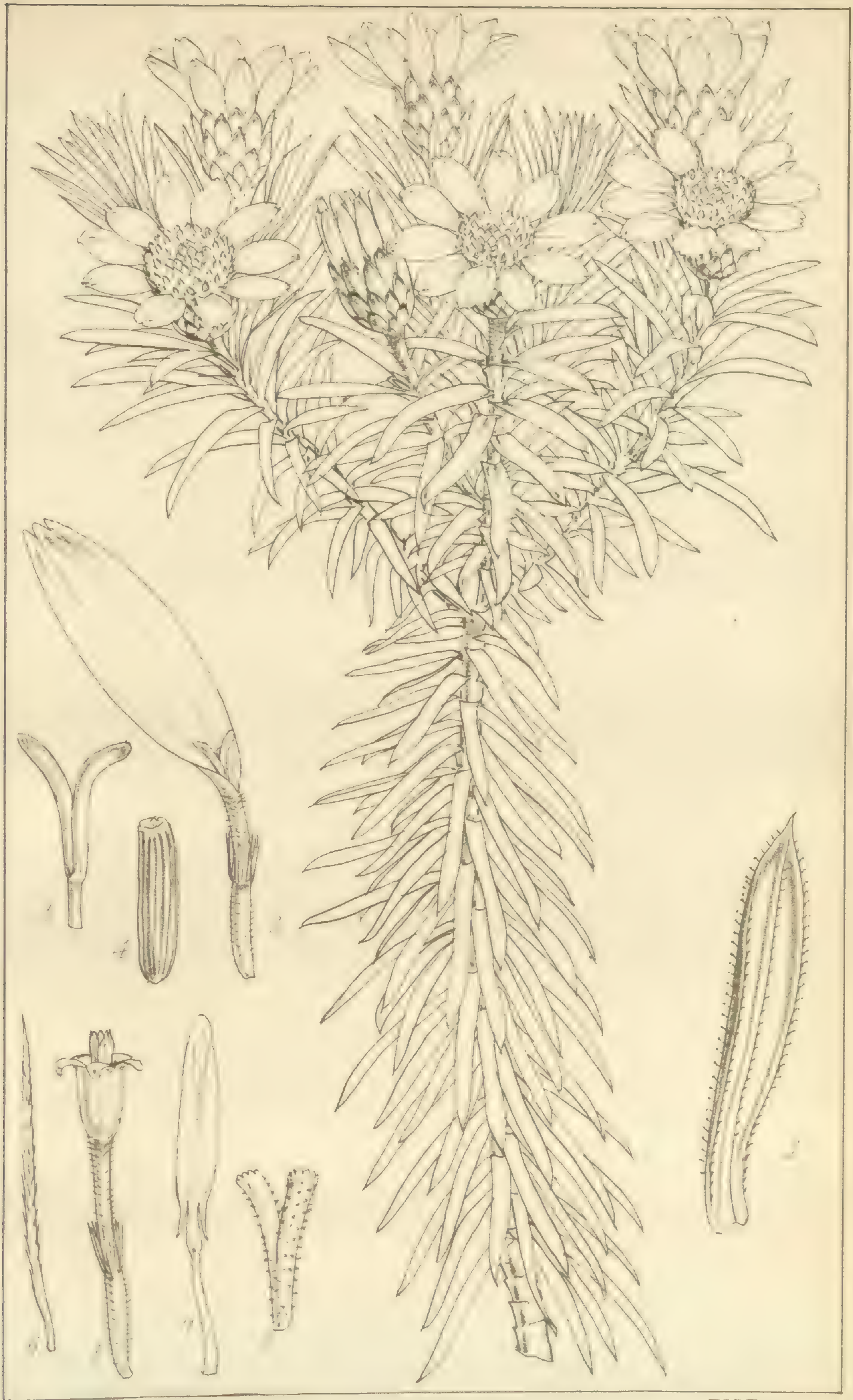
J. N. Fitch, imp.

Cassia villosa, *Mill.*

W. H. Fitch del et lith.

J. H. Vanheems imp.

Cassia goniodes, *A Cunn.*



W. H. Fitch del. et lith. J. N. Fitch imp.

Macowania revoluta, *Oliv.*

W.H.Fitch del. et. lith.

J.N.Fitch imp.

Cassia crassiramea, *Benth.*

W. H. Fitch, del. et lith.

J. N. Fitch imp.

Swartzia Matthewsii *Benth.*

Coursetia orbicularis, *Benth.*

W.H.Fitch,del et lith.

J.N.Fitch,imp

Anastrocles cylindricornis Fitch

W. H. Fitch, del et. lith.

Senecio sneeuwbergensis, *H. Bolus.*

W.H. Fitch del. et lith.

Stachyarrhena spicata, *Hook. fil.*

W H Fitch, del. et lith.

J N Fitch, imp.

Bothriospora corymbosa, *Hook. fil.*

W. H. Fitch, del. et lith. J. N. Fitch, imp.

Obbea Timonioides, *Hook. fil.*

W.H.Fitch del et lith. J.N Fitch, imp.

Rytidostus Sandvicensis. *Hook fil.*

W H. Fitch, del. et lith.

J N. Fitch, imp.

Tetralopha Motleyi, *Hook. fil.*

W.H. Fitch del. et lith.

J. W. Moore imp.

Gomphrena Pearcei *Oliv.*

W.H.Fitch, del. et lith.

J.N. Sowerby imp.

Synaptolepis Kirkii, *Oliv.*

W. H Fitch del et lith.

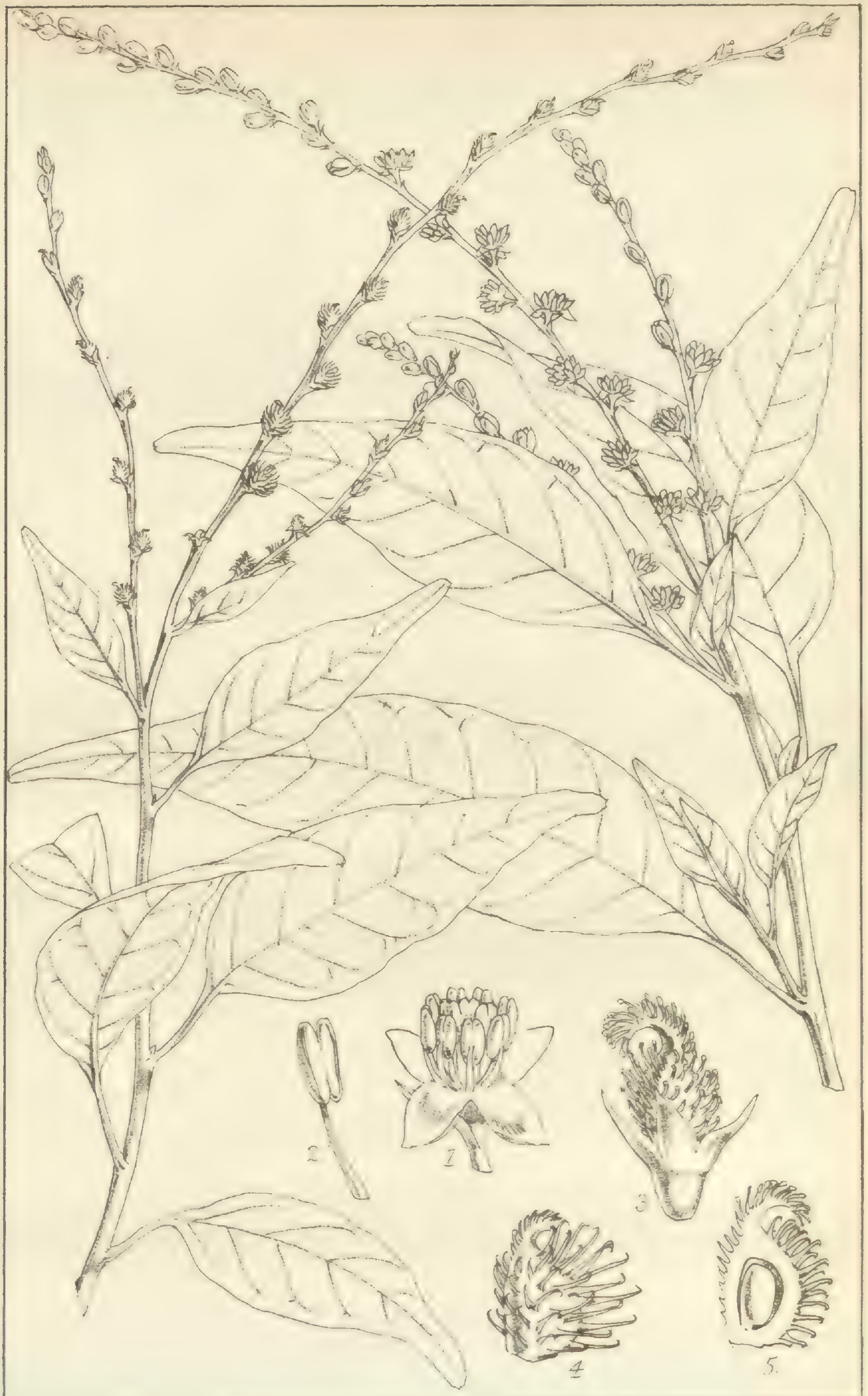
T. W. Atkinson

Gerrardina foliosa, *Oliv.*

W H Fitch, del et lith

J N Fitch, imp

Sclerolaēna paradoxa. *R.Br*



W.H. Fitch del. et lith.

J.N. Fitch imp.

Monococcus echinophorus, *F.M.*

J.N.Fitch, del. et lith.

J.N.Fitch, imp.

Babbagia dipterocarpa, *F.M.*

Pl. 1079

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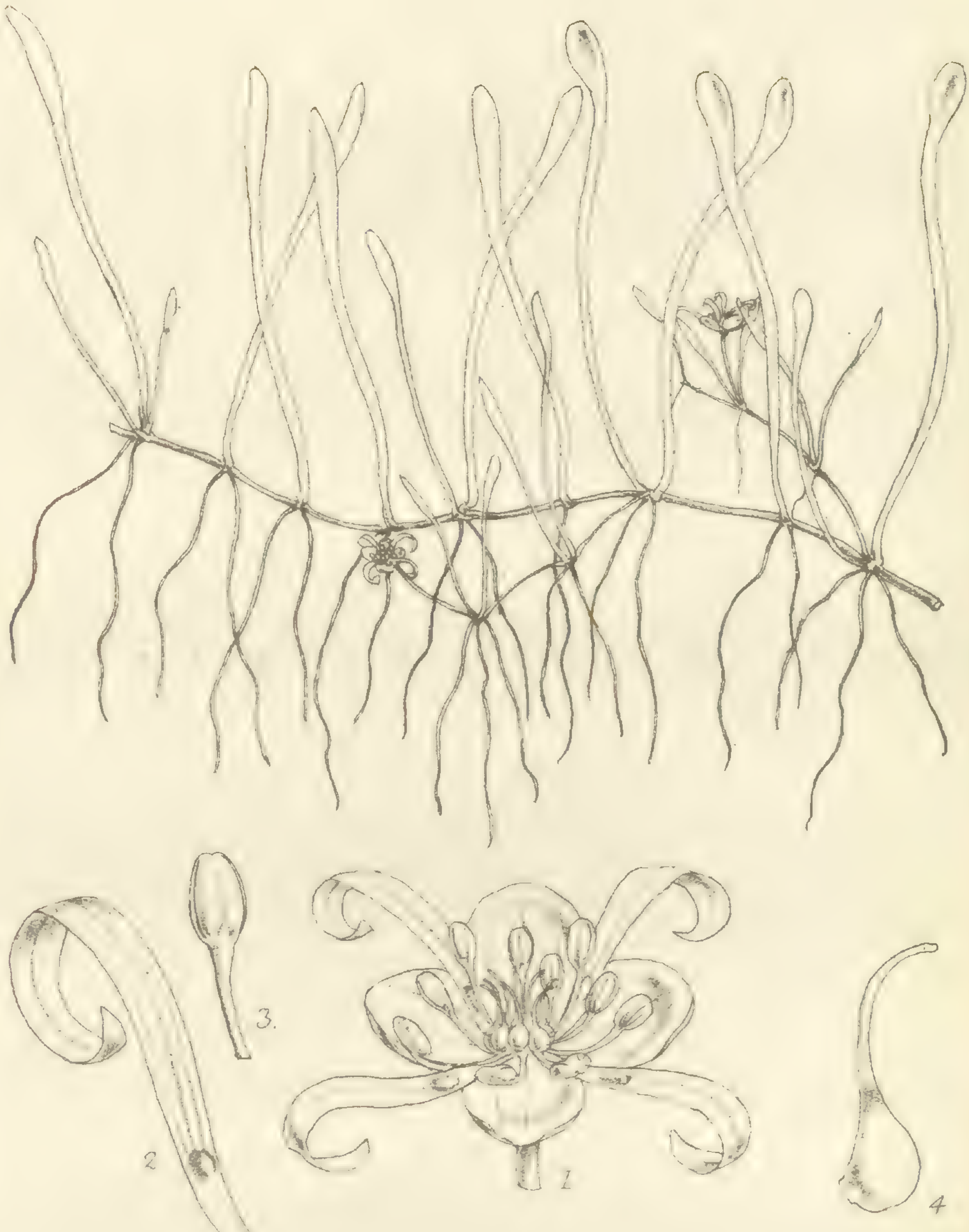
W.H. Fitch, del et lith.

Phyllopodium Krebsianum Bth

W.H.Fitch, del et lith.

J.N.Fitch, imp.

Buttonia natalensis, *McKen.*



W. H Fitch, del. et lith.

J. N Fitch, imp.

Ranunculus limoselloides. *FM*

W. H. Fitch, del et lith.

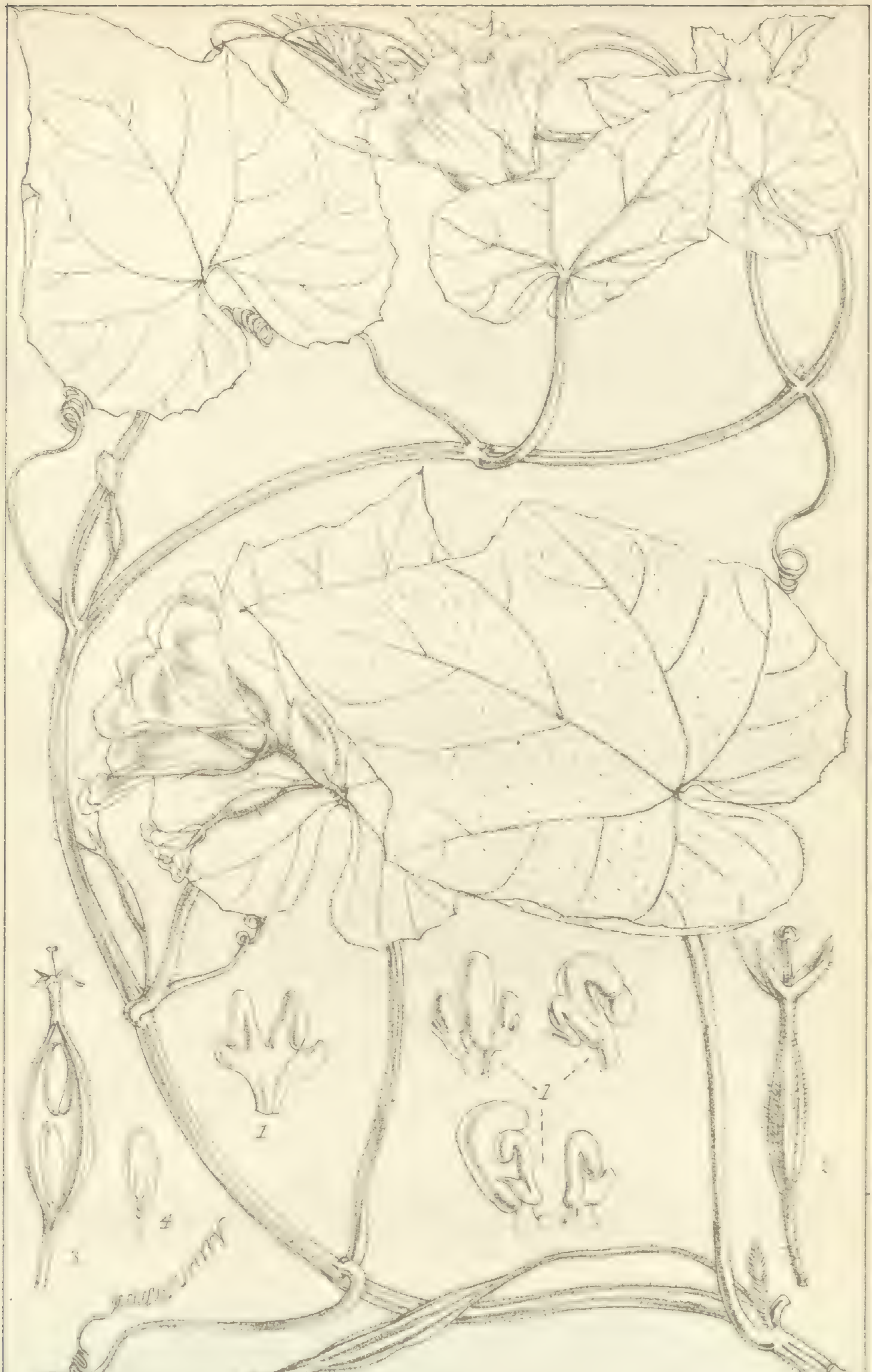
J. N. Fitch, imp.

Chalepoa magellanica. Fk f.

M H Ewen del et lith.

J N Lowe, imp.

Fuchsia Kirkii, *Hk. f.*



W. H. Fitch, del et lith

J. W. Parkinson

Hardwickia Binata Roxb. Hk. f.

W. H. Fitch, del. et. lith.

J. N. Fitch, imp.

Bredia Oldhamii, *Hk. f.*

W.H. Fitch, del et lith.

Sakersia africana, *Hk. f.*

W. H. Fitch, del. et lith.

J. H. Emch, imp.

Chætolepis loricarella. *Iriana.*

W. H. Fitch, del. et. lith.

J. N. Fitch, imp.

Brachytome Wallichii, *Hk. f.*

3.

7

6

4

5 1 2

W.H.Fitch, del. et lith.

J.N.Fitch, imp.

Coptosapeita Griffithii. *Hk. f.*

1

7.

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W. H. Fitch, del. et lith.

J. N. Fitch imp.

Tamatavea Melleri, *Hk. f.*

W. H. Fitch del et lith.

J N Fitch, imp.

Empogona Kirkii, *Hk. f.*

W H Fitch, del. et lith.

J.N Fitch, imp.

Leptactina Mannii, Hook f

W.H. Fitch, del et lith.

J.N. Fitch, Imp.

Phitopis multiflora, *Hk.f.*

W H Fitch, del et lith

J N Fitch, imp

Opisthocentra cidermioides. *Hk.f.*

4.

W H Fitch, del. et lith.

J N Fitch, imp.

Phyllacanthus Grisebachianus. Hf

W. H. Fitch, del. et lith. J. N. Fitch, imp.

Brachemidea longuebarica. *Niv.*

W.H. Fitch del et lith.

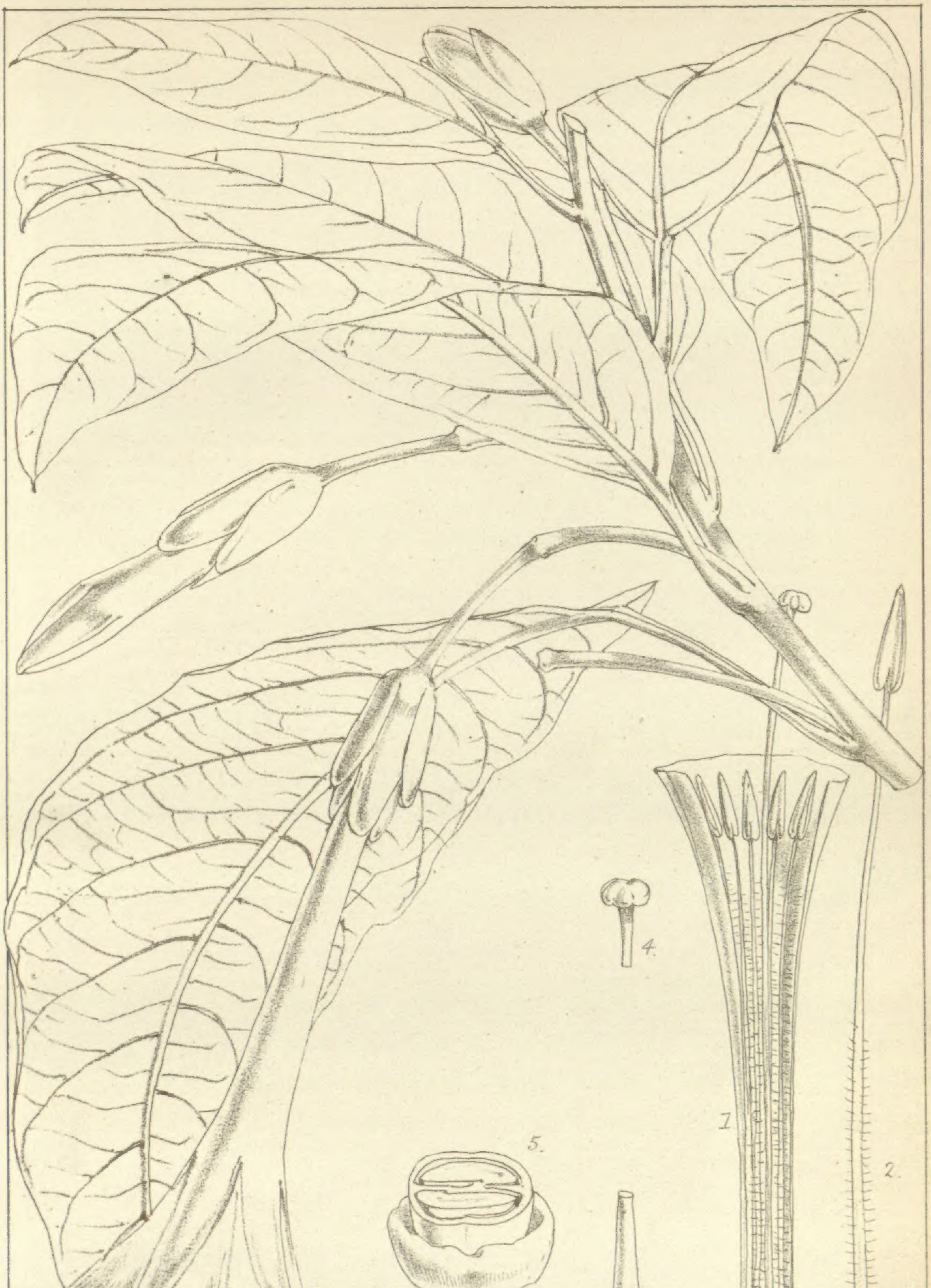
J.N. Fitch, imp.

Majidea zanguebarica, *Kirk.*

W.H. Fitch, del et lith.

J.N. Fitch, imp.

Strophanthus Kombe, *Oliv.*



W.H.Fitch, del et lith.

J.N.Fitch imp.

Ipomaēa Habeliana, *Otiv.*

W. H Fitch, del et lith.

J.N.Fitch, imp.

Paspalum Burchellii, *Munro.*